A2575-16

MARKET SHARES AND INDIVIDUAL COMPANY DATA FOR U.S. ENERGY MARKETS: 1950-1980

Martha A. Brannan and Craig G. Veith
Policy Analysis Department

Discussion Paper #014R

October 9, 1981

The contents of this paper are for the purposes of study and discussion and do not necessarily represent the views of the American Petroleum Institute or any of its members.

American Petroleum Institute
2101 L Street, Northwest
Washington, D.C. 20037

TABLE OF CONTENTS

PAGE

SUMMARY.. 1

I. The Energy Industries........................... 3

A. Coal and Uranium Production and Reserves.. 3
B. Concentration in Total U.S. Energy Production.................................... 4

DEFINITIONS.. 26

A. Crude Oil, Condensate and Natural Gas Liquids 26

B. Natural Gas Production.................... 27

C. Oil and Gas Reserves...................... 27

D. Coal Production and Reserves.............. 27

E. Uranium Production and Reserves........... 28

F. Refining Capacity......................... 29

G. Refining Runs............................. 30

H. Transportation - Interstate Oil Pipeline Ownership................................ 30

I. Marketing - Motor Gasoline Sales.......... 31

J. Marketing - Refined Product Sales......... 31

CONCENTRATION IN TOTAL ENERGY PRODUCTION: METHODOLOGY. 32

SECTION I: CONCENTRATION IN THE U.S. PETROLEUM INDUSTRY.................................. 34

I.A. Concentration Measures in Petroleum Production and Reserve Holdings............ 35

I.A.1. U.S. Crude Oil, Condensate and Natural Gas Liquids Production: 1955-1980.............. 36

I.A.2. U.S. Natural Gas Production: 1955-1980..... 46

TABLE OF CONTENTS

PAGE

I.A.3. Crude Oil, Condensate and Natural Gas Liquids Reserves: 1975-1980................ 56

I.A.4. Proven U.S. Natural Gas Reserves:1975-1980. 62

I.B. CONCENTRATION MEASURES IN PETROLEUM REFINING. 68

I.B.1. U.S. Refining Capacity: 1950-1980.......... 69

I.B.2. U.S. Refinery Runs: 1955-1980.............. 79

I.C. CONCENTRATION IN PETROLEUM TRANSPORATION..... 89

I.C.1. U.S. Interstate Oil Pipeline Ownership: 1951 to 1980.................................. 90

I.D. CONCENTRATION IN PETROLEUM MARKETING......... 99

I.D.1. U.S. Refined Product Sales: 1965-1980......100

I.D.2. U.S. Motor Gasoline Sales: 1954-1980.......108

SECTION II: CONCENTRATION IN THE U.S. PRODUCTION OF ENERGY...................................117

II.A. CONCENTRATION IN COAL AND URANIUM PRODUCTION AND RESERVE HOLDINGS.........................118

II.A.1. U.S. Bituminous Coal and Lignite Production: 1955-1980..........................119

II.A.2. U.S. Coal Reserves: 1975-1980..............129

II.A.3. U.S. Uranium Concentrate (U_3O_8) Production: 1955-1980.................................136

II.A.4. U.S. Uranium Concentrate (U_3O_8) Reserves 1975-1980.................................146

II.B. PRODUCTION CONCENTRATION LEVELS IN AN ENERGY MARKET OF OIL, GAS, COAL AND URANIUM COMBINED ON A BTU AND DOLLAR BASIS...................153

II.B.1. Top U.S. Energy Producing Companies on a BTU Basis:1955-1980........................153

II.B.2. Top U.S. Energy Producing Companies on a Dollar Basis: 1955-1980....................161

SUMMARY

During the 1970-1980 period, oil production concentration declined slightly. For example, the 4-firm concentration ratio was 25.3 percent in 1980 compared with 26.3 percent in 1970, while the 8-firm ratio was 40.8 percent in 1980 compared with 41.7 percent in 1970.

Concentration indices for natural gas production decreased rather substantially during this period. The 4-firm concentration was 19.2 percent in 1980 compared with 25.2 percent in 1970, while the 8-firm ratio was 30.6 percent compared with 39.1 percent in 1970.

Concentration of U.S. oil reserve holdings fell modestly from 1975 to 1980. Oil reserve ownership, however, is more concentrated than oil production. For example, in 1980 the top 4 reserve holders owned 35.3 percent of U.S. oil reserves while the top 4 producers accounted for 25.3 percent of total production.

The difference between reserve concentration and production concentration occurs largely because three companies, Standard Oil Company (Ohio), Exxon, and Atlantic Richfield, own most of the large Alaskan Prudhoe Bay reserves. The reserve to production ratio for Alaskan oil is higher than the reserve to production ratio for oil located elsewhere in the U.S. Hence, the concentration of Alaskan reserve ownership affects total reserve concentration more than the concentration of Alaskan production affects total production concentration.

Concentration indices of natural gas reserve holdings in 1980 continued to fall from 1975 levels. The 4-firm concentration ratios for natural gas reserves were 23.9 percent in 1980 compared with 26.9 percent in 1975. Natural gas reserve ownership is less concentrated than oil reserve ownership. In part, this is because some natural gas transmission companies hold substantial natural gas reserves but little or no crude reserves. It also reflects the fact that the Alaskan portion of total natural gas reserves is smaller than the Alaskan portion of total oil reserves. Hence, Alaskan reserve ownership affects the concentration ratios for crude reserves more than for natural gas reserves.

Concentration in refining capacity again declined in 1980, and is now well below the levels of the 1960's and early 1970's. By most measures concentration in refinery runs also is well below the levels of the 1960's and early 1970's.

Concentration in marketing of both gasoline and other refined products has continued its steady decline since the 1960's. Marketing is more concentrated than oil and natural gas production, but it is less concentrated than refining.

Concentration in interstate pipeline transportation has been fairly stable during the past few years. It remains well below the levels of the 1950's and 1960's.

I. The Energy Industry

A. Coal and Uranium Production and Reserves

In 1980, total production of coal increased approximately 6.5 percent over the 1979 level, making 1980 production the largest to date. Coal production concentration levels fell in 1980, and are now well below 1970 levels. For example, the 4-firm concentration ratio of 21.1 percent is substantially lower than the 1970 4-firm level of 30.7 percent.

Coal reserve concentration indices increased at all levels in 1980. Oil firm ownership of coal reserves increased to 22.9 percent in 1980 from 20.5 percent in 1979 and 22.0 percent in 1975.

Uranium production concentration continued to drop significantly from 1975 ratios. In 1980, the 4-firm ratio was 40.0 percent compared with 58.2 percent in 1975. At the 8-firm level, a concentration ratio of 61.0 percent compared to 81.5 percent in 1975. The share of uranium producton accounted for by oil firms has shown a large increase over the past several years.

The Department of Energy provides estimates of U.S. uranium reserves in its annual publication "Statistical Data of the Uranium Industry." In 1980, the Department estimated that 112 thousand tons of uranium would be recoverable at a cost of $15 per pound, 470 thousand tons at $30 per pound, and 787 thousand tons at a $50 per pound cost. Each uranium producer, however, does not provide comparable data for its reserves, thus making it difficult to calculate market shares for uranium reserves.

B. Concentration In Total U.S. Energy Production

As Table 16 indicates, on a BTU basis, concentration in total energy production has declined during the 1970's. The largest four energy producers in 1980 accounted for 16.1 percent of total energy produced, as compared with 19.3 in 1970. The 8 largest energy producers in 1980 accounted for 27.2 percent of total energy produced, as compared with 31.6 percent in 1970. On a dollar basis, concentration in total energy production also has decreased during the 1970-1980 period.

Table 17 summarizes the effect that oil company coal and uranium production has had on total energy market concentration. To calculate this effect, it was assumed that the coal and uranium output of oil companies was independently produced, and concentration measures derived under this assumption were then compared to the actual concentration indices. In 1980, on a BTU basis, the 4-firm total energy production concentration index would have been 3.4 percentage points lower and the 8-firm concentration index 5.0 percentage points lower if the oil companies did not produce coal and uranium. Also in 1980, but on a dollar basis, the 4-firm ratio would have been 0.8 percentage points lower and the 8-firm ratio 1.1 percentage points lower.

TABLE 1

U.S NET CRUDE OIL, CONDENSATE AND NATURAL GAS LIQUIDS PRODUCTION CONCENTRATION RATIOS, 1955,1960, 1965, 1970, 1975, 1979, and 1980
(Percent of U.S. Total)

Concentration Ratios	1955	1960	1965	1970	1975(r)	1979(r)	1980
4 - Firm	18.1	20.8	23.9	26.3	26.0	24.0	25.3
8 - Firm	30.3	33.5	38.5	41.7	41.2	40.5	40.8
15 - Firm	41.0	44.2	50.3	56.9	57.0	56.1	56.2
20 - Firm	46.3	49.1	55.0	61.1	61.2	60.6	60.5
30 - Firm						64.5	64.3
40 - Firm						66.2	66.1

(r) Revis[illegible] September 1981
Source: Tables following in Section I.A.1.

TABLE 2

U.S. NET NATURAL GAS PRODUCTION
CONCENTRATION RATIOS
1955,1960, 1965, 1970, 1975, 1979 and 1980
(Percent of U.S. Total)

Concentration Ratios	1955	1960	1965	1970	1975(r)	1979(r)	1980
4 - Firm	21.7	16.8	20.8	25.2	24.2	21.2	19.2
8 - Firm	33.1	28.4	33.6	39.1	36.8	32.8	30.6
15 - Firm	44.4	39.9	46.0	53.2	52.2	45.9	44.1
20 - Firm	49.9	45.0	50.9	58.0	58.1	51.7	50.5
30 - Firm						57.5	56.5
40 - Firm						60.4	59.7

(r) Revised September 1981

Source: Tables following in Section I.A.2.

TABLE 3

PROVEN U.S. CRUDE OIL, CONDENSATE, AND NATURAL GAS LIQUIDS RESERVES CONCENTRATION RATIOS, 1975, 1979, 1980

(Percent of U.S. Total)

Concentration Ratios	1975(r)	1979(r)	1980
4 - Firm	36.3	35.7	35.3
8 - Firm	55.6	53.2	52.7
15 - Firm	70.4	67.5	67.2
20 - Firm	74.5	70.8	70.5
30 - Firm		73.7	73.5
40 - Firm		75.0	74.8

(r) Revised September 1981.

Source: Tables following in Section I.A.3.

TABLE 4

PROVEN U.S. NATURAL GAS RESERVES
CONCENTRATION RATIOS, 1975, 1979, 1980
(Percent of U.S. Total)

Concentration Ratios	1975(r)	1979(r)	1980
4 - Firm	26.9	25.0	23.9
8 - Firm	39.7	38.5	37.5
15 - Firm	56.9	53.7	52.4
20 - Firm	64.0	59.3	58.1
30 - Firm		65.2	63.7
40 - Firm		68.1	66.3

(r) Revised September 1981

Source: Tables following in Section I.A.4.

TABLE 5

CONCENTRATION IN REFINERY CAPACITY:
U.S. AND PUERTO RICO
1950, 1960, 1965, 1970, 1975, 1979 and 1980

(Percent of U.S. Total)

Concentration Ratios	1950*	1960*	1965	1970	1975	1979	1980
Top 4	34.7	32.0	30.4	32.5	29.9	29.7	29.0
Top 8	57.9	55.0	54.3	57.5	53.5	50.3	49.0
Top 15	76.2	72.5	75.0	78.1	72.9	69.0	67.0
Top 20	83.1	81.4	83.0	84.3	80.2	76.2	74.5
Top 30						83.4	82.4
Top 40						87.9	86.8

(r) Revised September 1981.

* Does not include Puerto Rico. The years 1950 and 1960 have also been revised.

Source: Tables following in Section I.B.1.

TABLE 6

CONCENTRATION IN REFINERY RUNS:
U.S. AND PUERTO RICO
1955, 1960, 1965, 1970, 1975, 1979 and 1980

(Percent of U.S. Total)

Concentration Ratios	1955	1960	1965	1970	1975	1979(r)	1980
Top 4	33.1	33.2	31.0	34.2	32.9	30.5	31.4
Top 8	57.7	56.8	55.3	61.0	57.7	54.4	54.3
Top 15	76.6	74.2	73.3	84.6	79.4	74.0	73.3
Top 20	84.8	83.4	81.4	91.1	86.8	81.5	81.0
Top 30						88.0	87.6

(r) Revised September 1981.

Source: Tables following in Section I.B.2.

TABLE 7

CONCENTRATION IN INTERSTATE OIL PIPELINE OWNERSHIP[1/]
1951, 1962, 1972, 1975, 1979 and 1980
(Percent of U.S. Total)

Owner-Companies	1951	1962	1972	1975	1979(r)	1980
Top 4	44.0	36.7	33.7	32.4	30.5	30.8
Top 8	71.1	61.9	55.6	53.9	54.6	54.8
Top 15	91.1	82.3	77.8	76.6	75.6	74.9
Top 20	96.4	90.3	86.6	85.0	84.3	83.3
Top 30					89.4	89.5
Top 40					91.3	91.4

p: Preliminary

1/ Measured in barrel-miles handled in trunk lines.

r: Revised September 1981.

Sources: Tables following in Section I.C.1.

TABLE 8

CONCENTRATION IN REFINED PRODUCT SALES
1965, 1970, 1975, 1979 and 1980
(Percent of U.S. Total)

Concentration Ratios	1965	1970(r)	1975(r)	1979(r)	1980
Top 4	36.9	34.0	31.0	27.9	27.6
Top 8	60.0	57.3	51.3	47.3	46.1
Top 15	78.6	77.2	69.8	66.2	65.1
Top 20	86.4	82.5	76.6	72.8	72.0
Top 30				79.1	78.4

r: Revised September 1981.

Source: Tables following in Section I.D.1.

TABLE 9

CONCENTRATION IN MOTOR GASOLINE SALES
1954, 1969, 1970, 1975, 1979 and 1980
(Percent of National Market)

Concentration Ratios	1954	1969	1970	1975(r)	1979(r)	1980
Top 4	31.2	31.7	30.7	29.5	28.9	28.5
Top 8	54.0	56.7	54.6	50.3	49.9	49.3
Top 15	72.6	75.7	74.9	68.6	66.3	65.4
Top 20	80.5	81.0	80.0	74.7	71.8	71.0
Top 30					78.0	77.4

(r) Revised September 1981.

Source: Tables following in Section I.D.2.

TABLE 10

OIL COMPANY COAL AND URANIUM PRODUCTION, 1980

	Coal (000 tons)	Uranium (Tons)
Conoco (Consolidation)	48,955	453.1
Occidental (Island Creek)	20,017	---
Ashland (Arch Minerals)	15,818	---
Std. Ohio (Old Ben)	11,200	129.5
Gulf (Pittsburg & Midway)	9,685	270.0
Exxon (Carter Mining)	11,400	1,800.0
Atlantic Richfield (Thunder Basin)	11,091	2,024.5
Kerr-McGee (Kerr-McGee Coal)	10,676	2,813.3
Quaker State (Valley Camp)	4,642	---
Sun Oil (Sunoco Devel.)	6,560	---
Houston Nat. Gas (Ziegler)	4,042	168.7
Shell (R&F Coal)	3,267	---
Tesoro Petroleum	482	---
Transco (Diamond Coal)	2,259	---
MAPCO	7,391	---
Readings & Bates (Belva Coal)	828	---
Panhandle Eastern	700	---
Coastal	2,101	15.0
Getty	---	702.0
Mobil	---	385.5
Std. California	---	961.0
U.S. Total	835,400	21,850.0
Oil Firm Total	171,114	9,722.6
Oil Firm Share of Total Production	20.5	44.6

TABLE 11

SUMMARY OF OIL FIRM ACTIVITY IN COAL PRODUCTION[1]
1960, 1965, 1970, 1975, 1979 and 1980

	1960	1965	1970	1975	1979(r)	1980
Oil Firm Coal Production (000 Tons)[2]	0	8,186	115,745	108,340	149,999	171,114
Total U.S. Coal Production (000 Tons)	415,512	512,088	602,933	640,000	781,134	835,400
Oil Firm Share of Total U.S. Coal Production (Percent)	0	1.6	19.2	16.9	19.2	20.5

---

[1] Bituminous coal and lignite production only. Excludes anthracite.

[2] Includes Pittsburg and Midway Coal Mining Co. (Gulf Oil Corp.) in 1965; plus Consolidation Coal Co. (Continental Oil), Island Creek Coal Co. (Occidental Petroleum), Old Ben Coal Corp. (Standard Oil of Ohio), Hawley Fuels (Belco), Monterey Coal (Exxon) and Braztah Coal (McCulloch Oil) in 1970; plus Arch Mineral Corp. (Ashland Oil) and Tesoro Coal Co. (Tesoro Petroleum) in 1975. 1979 included Continental, Shell, Atlantic Richfield, MAPCO, Exxon, Standard Oil of Ohio, Reading and Bates, Occidental, Gulf, Quaker State, Transcontinental, Ashland, and Sun. Companies included in the 1980 figure are shown in Table 10. Inclusion of Amax in 1979 and 1980, would result in the following:

	1979	1980
Oil Firm Coal Production (000 tons)	184,558	211,611
Oil Firm Share of Total U.S. Coal Production (percent)	23.8	25.3

(r) Revised September 1980

Source: Keystone News Bulletin, February 1981; Keystone Coal Industry Manual, U.S. Coal Production By Company, 1960, 1965, 1970, 1975, and 1979; U.S. Department of Energy (U.S. Totals). Exxon Co., U.S.A., Submission before Senate Judiciary Subcommittee on Antitrust and Monopoly, August 4, 1977.

TABLE 12

U.S. BITUMINOUS COAL AND LIGNITE PRODUCTION CONCENTRATION RATIOS 1955, 1960, 1965, 1970, 1975, 1979 and 1980

(Percent of U.S. Total)

Concentration Ratios	1955	1960	1965	1970	1975	1979(r)	1980(p)
4 - Firm	17.8	21.4	26.6	30.7	26.0	22.3	21.1
8 - Firm	25.5	30.5	36.3	41.2	35.7	30.8	29.5
15 - Firm	34.7	39.7	45.6	52.2	45.5	41.5	40.3
20 - Firm	39.6	44.5	50.1	56.5	50.5	46.9	46.7
30 - Firm						54.6	55.2
40 - Firm						60.3	60.5
Oil Firm	0	0	1.6	19.2	16.7	19.2	20.5

(r) Revised September 1981
(p) preliminary

Source: Tables in Section II.A.1.

TABLE 13

U.S. COAL RESERVES CONCENTRATION RATIOS
1975, 1979 and 1980

(Percent of U.S. Total)

	1975(r)	1979	1980
4-Firm	15.9	14.9	16.3
8-Firm	23.4	23.1	24.6
15-Firm	30.4	30.2	31.4
20-Firm	34.2	33.2	34.5
30-Firm		37.6	39.3
40-Firm		40.5	42.7
Oil Firms	22.0	20.5	22.9

(r) Revised September 1981

Source: Tables following in Section II.A.2.

TABLE 14

SUMMARY OF OIL FIRM ACTIVITY IN URANIUM CONCENTRATE (U3O8) PRODUCTION 1955, 1960, 1965, 1970, 1975, 1979 and 1980

	1955(r)	1960(r)	1965(r)	1970(r)	1975(r)	1979	1980
Oil Firm U3O8 Concentrate Production (Tons)1/	250	4,680	2,230	2,664	3,631	7,220	9,722.6
Total U3O8 Concentrate Production (Tons)	4,400	18,800	10,600	13,100	12,300	18,730	21,850
Oil Firm Share of Total Production (Percent)	5.7	24.9	21.0	20.7	31.3	38.5	44.5

---

1. Includes Kerr-McGee Corp. in 1955; Kerr-McGee Corp., Phillips Petroleum Co., and Atlantic Richfield, in 1960; Kerr-McGee Corp. and Petrotomics Co. (Getty Oil), in 1965 and 1970; and Kerr-McGee Corp., Exxon and Continental Oil in 1975; Conoco, Getty, Kerr-McGee, Atlantic Richfield, Mobil, Phillips, Exxon, and Gulf in 1979. Companies included in the 1980 figure can be found in Table 10.

Source: 1955-1970: FTC, Concentration Levels and Trends in the Energy Sector of the U.S. Economy, March 1974. 1975-1979: Tables in Section II.A.3

(r) Revised September 1981.

TABLE 15

U.S. URANIUM OXIDE CONCENTRATE (U_3O_8) PRODUCTION CONCENTRATION RATIOS*

1955, 1960, 1965, 1970, 1975, 1979 and 1980

(Percent of U.S. Total)

Concentration Ratios	1955	1960	1965	1970	1975(r)	1979	1980
4 - Firm	48.3	48.3	54.5	54.7	58.2	44.4	40.0
8 - Firm	60.0	68.1	78.1	79.8	81.5	69.1	61.0
15 - Firm	60.5	88.9	96.6	98.8	N.A.	82.3	80.0
20 - Firm		93.6	98.5	N.A.	N.A.	88.2	88.0
Oil Firm Total	5.7	24.9	21.0	20.7	31.3	38.5	44.5

* Inasmuch as reporting of company data was incomplete, year-to-year comparisons of concentration ratios cannot confidently be made.

(r) Revised September 1981.

Source: Tables following in Section II.A.3.

TABLE 16

FOUR-, EIGHT-, FIFTEEN-FIRM, AND TWENTY-FIRM CONCENTRATION LEVELS IN THE PRODUCTION OF ENERGY ON A BTU AND DOLLAR BASIS: 1955, 1960, 1970, 1975, 1979 and 1980

(Percent of U.S. Total)

Basis/Concentration Level	Concentration Ratios						
	1955(r)	1960(r)	1965(r)	1970(r)	1975(r)	1979(r)	1980
Btu Basis							
Four-Firm	12.3	12.3	15.2	19.3	18.0	14.9	16.1
Eight-Firm	20.6	21.8	25.1	31.6	29.2	25.0	27.2
Fifteen-Firm						37.4	41.5
Twenty-Firm						43.2	47.4
Dollar Basis							
Four-Firm	14.4	16.0	19.2	21.1	18.7	18.1	18.9
Eight-Firm	24.4	26.6	31.2	34.1	30.9	30.6	32.1
Fifteen-Firm						44.2	45.3
Twenty-Firm						49.2	50.1

(r) Revised September 1981

Source: Tables in Section II.B.2 (Dollar Basis Figures); Section II.B.1 (Btu Basis Figures)

TABLE 17

EFFECT OF OIL FIRM COAL AND URANIUM PRODUCTION ON TOTAL ENERGY PRODUCTION CONCENTRATION, 1975, 1979 and 1980

(Percent of U.S. Total)

Basic/Concentration Level	Concentration Ratio (Percent)					
	Including Coal and Uranium Production by Oil Companies			Assuming Oil Company Coal and Uranium Production Was Independently Produced		
	1975	1979	1980	1975	1979	1980
BTU						
Four-Firm	18.0	14.9	16.1	16.9	13.3	12.7
Eight-Firm	29.2	25.0	27.2	27.4	22.2	22.2
Fifteen-Firm		37.4	41.5		33.4	34.1
Twenty-Firm		43.2	47.4		38.9	39.4
DOLLAR						
Four-Firm	18.7	18.1	18.9	18.6	17.5	18.1
Eight-Firm	30.9	30.6	32.1	29.7	29.4	31.0
Fifteen-Firm		44.2	45.3		41.7	43.1
Twenty-Firm		49.2	50.1		46.6	47.8

Taken from tables in Sections II.B.1 and II.B.2.

TABLE 18

AVERAGE BTU CONVERSION FACTORS1/
1955, 1960, 1965, 1970, 1975, 1979 and 1980
(million BTU's)

Energy Source	1955	1960	1965	1970	1975	1979	1980
Oil (per barrel)	5.814	5.695	5.592	5.620	5.800	5.800	5.800
Natural Gas Liquids (per barrel)	4.296	4.039	4.250	4.106	3.984	3.955	3.955
Natural Gas (per 000 cubic feet)	1.120	1.107	1.101	1.102	1.021	1.021	1.021
Coal (per short ton)	26.000	25.660	25.420	24.580	23.200	22.590	22.590
Uranium (per short ton U3O8)	430,000.	430,000.	430,000.	430,000.	430,000.	430,000.	430,000.

1/ At the well-head, mine-mouth, or other original production point for oil, natural gas liquids, natural gas, and coal. After milling for uranium.

Source: 1955-1970: FTC *Concentration Levels and Trends in the Energy Sector of the U.S. Economy*;
U.S. Bureau of Mines (Natural Gas Liquids);
1975: U.S. Bureau of Mines; Energy Research and Development Administration (uranium);
1979: Department of Energy, *Monthly Energy Review*, August 1980;
Uranium: Department of Energy, Grand Junction, Colorado.
1980: Department of Energy, *Monthly Energy Review*, August 1981;
Uranium: Department of Energy, Grand Junction, Colorado.

(r) Revised September 1981

TABLE 19

AVERAGE DOMESTIC PRICES PER UNIT OF MEASURE 1/ 1955, 1960, 1965, 1970, 1975, 1979 and 1980

Energy Source	1955	1960	1965	1970	1975	1979	1980
Oil (Dollars per barrel	2.77	2.88	2.86	3.18	7.50	12.64	21.19
Natural Gas Liquids 2/ (Dollars per barrel)	2.18	2.39	2.06	2.10	4.65	15.96	21.00
Natural Gas (Cents) per 000 cubic feet)	10.4	14.0	15.6	17.1	44.5	114.4	149.6
Coal (Dollars per short ton)	4.50	4.69	4.44	6.26	19.23	23.50	26.00
Uranium (Dollars per pound 3/ (U308)	12.25	8.75	8.00	6.30	10.70	23.85	28.15

1/ At the well-head, mine-mouth, or other original production point for oil, natural gas liquids, natural gas, and coal. After milling for uranium.

2/ This is an average at-plant price for all natural gas liquids: Ethane, LPG, natural gasoline and Other (which includes isopentane, plant condensate, finished gasoline, special naptha, distillate fuel oil, kerosine and miscellaneous)

3/ In 1979, the uranium price per pound was $23.85 and in 1980, $28.15. This price is an average of contract prices and spot market prices.

Source: 1955-1970: FTC Concentration Levels and Trends in the Energy Sector of the U.S. Economy; U.S. Bureau of Mines (Natural Gas Liquids);
1975-1976: ERDA U.S. Bureau of Mines, Mineral Commodities Summaries;
1979: Oil, Natural Gas: DOE, Monthly Energy Review, April, 1980;
Uranium: Survey of U.S. Uranium Marketing Activity, August 1980.
Coal: Energy Information Administration, Annual Report to Congress, Vol. II,1979.
1980: Oil, Natural Gas: Department of Energy, Monthly Energy Review, August 1981;
Uranium: Survey of U.S.Uranium Marketing Activity, July 1981;
Coal: EIA, Annual Report to Congress, 1981;
Natural Gas Liquids: Department of Energy, Monthly Petroleum Product Price Report, February 1981.

TABLE 20

PRICE PER MILLION BTU OF THE FIVE MAJOR ENERGY SOURCES 1955, 1960, 1965, 1970, 1975, 1979 and 1980

(in cents)

	1955	1960	1965	1970	1975	1979(r)	1980
Oil	47.6	50.6	51.1	56.6	129.3	217.9	365.4
Natural Gas Liquids	50.7	59.2	48.5	51.1	116.7	385.6 1/	531.0
Natural Gas	9.3	12.6	14.2	15.5	43.6	115.4	146.5
Coal	17.3	18.3	17.5	25.5	82.9	104.1	115.1
Uranium	5.7	4.1	3.7	2.9	5.0	11.1	13.1

1/ This figures includes imports; no actual domestic price available.

(r) revised September 1981.

Source: Summary Tables 18 and 19.

DEFINITIONS

The term "production", as used in this report, refers to net production or the total volume of oil, gas or coal that is extracted from the ground and which belongs to a company after all royalties and partnership interests have been paid. It is that portion of gross production over which a company has ownership rights.

Reserves are quantities of oil, gas, coal and uranium estimated to be present in the ground and recoverable based on technological and economic conditions at the time of determination. Net reserves are the portion of total reserves applicable to a company's interest in the mineral source. As in production, they are the holdings over which the firm has ownership rights. The oil and natural gas proved reserves definition used in this report is the volume in known oil and gas reservoirs which is commercially recoverable under existing economic and operating conditions.

A. Crude Oil, Condensate, and Natural Gas Liquids Production

Crude oil and condensate are the liquids normally produced from oil or gas wells and liquids/gas separation facilities. Natural gas liquids production is measured by volumes delivered from lease storage tanks and natural gas processing plants (i.e., the point of custody transfer) to pipelines, trucks, or other means of transport to refineries or terminals.

When a company reports both natural gas liquids obtained from leasehold interest ownership and from natural gas processing plant ownership, we exclude volumes in the latter to avoid possible double counting.

B. Natural Gas Production

Natural gas production figures represent adjustments in volumes of gas where applicable. For example, the volume of natural gas withdrawn from underground storage facilities is not included. Also excluded from production figures is natural gas consumed in processing or used on the same lease, as well as gas vented or flared.

C. Oil and Gas Reserves

Crude oil, condensate and natural gas liquids reserves do not include reserves reported as "indicated additional reserves"; oil that may occur in untested prospects; and oil that may be recovered from oil shales, coal, gilsonite and other similar sources. Natural gas reserves do not include gaseous equivalents of natural gas liquids; natural gas being held in underground storage; and non-hydrocarbon gases.

To avoid double counting, reserves controlled through natural gas plant ownership or committed to a company under long-term contract have not been included in reserve figures.

D. Coal Production and Reserves

Coal production figures represent bituminous coal and lignite.

The U.S. coal reserve base is defined as a portion of total domestic identified resources which is suitable for mining. On a national basis, at least 50% of in-place coal reserves is recoverable. This recoverable portion is termed "reserves" or "recoverable reserves" as distinguished from the "reserve base."

The recoverable reserves figures of 284 billion tons used in this report is conservative and may underestimate the amount of total recoverable reserves. Because the figures reported by Keystone do not differentiate between recoverable and in-place reserves, the market share will be overstated for companies whose reserves fall into the "in-place" category and cannot be economically extracted.

E. Uranium Production and Reserves

Uranium production is measured in tons of uranium oxide (U3O8) which is extracted from the ore. In 1975, the average millfeed grade was 0.15 percent uranium oxide while in 1980 it was 0.10.

Uranium reserves are estimated quantities of known uranium deposits of such grade, quantity and depth that can be recovered at, or less than, a specific cost. These estimates are derived from drill-hole and other data provided to the Department of Energy (DOE) by uranium companies The cost categories or "forward costs" of $15, $30, and $50/lb. of U3O8 include the operating and capital costs needed in the production of uranium. These various forward costs are independent of the market price at which the uranium is sold. As of January 1, 1978, reserves at $10/lb were no longer reported by DOE. Within each cost category, reserve estimates change due to revisions of estimates, extensions of known deposits, cost increases or re-evaluations, discoveries and production.

Uranium reserve figures should be considered as approximations because companies generally do not report the cost basis for reserve figures in their public documents.

F. Refining Capacity

Refining capacity is the maximum number of barrels of crude oil that can be processed in a company's processing unit per day. According to DOE (formerly Bureau of Mines), the definition of operable refinery capacity includes capacity that is in operation; capacity capable of being placed in operation within thirty days; and capacity under active repair which can be completed within 90 days.

Figures in the tables of this report were taken from the DOE and Bureau of Mines as listed in a publication of the National Petroleum Refiners' Association entitled "U.S. Refining Capacity." The National Petroleum Refiners' Association reports only capacity in operation and excludes those refineries which were shut down on the survey date, January 1, of each year, so they have been excluded from this report as well.

G. Refinery Runs

Total referinery runs, or throughput, is defined as the number of barrels of crude oil and condensate which have been processed through crude oil distillation units. Individual company throughput figures should be considered approximations because they are generally included in the companies' annual reports without specific definitions of measurement.

H. Transportation -- Interstate Oil Pipeline Ownership

Market shares for interstate oil pipelines were calculated by applying pipeline ownership information to the barrel-miles for each of the interstate oil pipelines. Barrel-miles (the number of barrels times the distance moved) was selected as the best measure for interstate pipelines because it captures both the quantity and distance components of transportation service. The Form P annual reports required by the Federal Energy Regulatory Commission list both barrel-miles and ownership information.

To find each owner's barrel-miles, the ownership share in each pipeline was multiplied by the barrel miles reported for the corresponding pipeline. The appropriate barrel-miles were then totalled for each owner company. Because barrel-miles are reported only for trunk lines, these figures include only the Federally rate-regulated interstate oil trunk lines (the sum of crude trunk-line barrel-miles and products trunk-line barrel miles).

I. Marketing -- Motor Gasoline Sales

Motor gasoline sales figures were obtained from the Lundberg Survey, the most comprehensive source for gasoline marketing data. Lundberg's figures come from state revenue offices and are based on tax-paid gallonage. Generally, company reported figures are larger than Lundberg's because they are developed at a different point in the marketing chain of distribution, and include tax-exempt sales.

J. Marketing -- Refined Product Sales

Refined products include motor and aviation gasoline; distillate fuels; jet fuels and kerosene; residual fuel oils; and other products such as LPG, asphalt, lubricants, and greases. Refined product sales volumes were obtained, in aggregate, from company annual reports.

CONCENTRATION IN TOTAL ENERGY PRODUCTION: METHODOLOGY

The energy industry's concentration levels have frequently been examined because of their relevance to interfuel substitutability. The electric utility sector shows a strong tendency toward fuel-switching, and anticipated technological advances, particularly in coal liquefaction and gasification, may render fuels more readily substitutable.

To measure concentration in the entire energy industry, it was necessary to combine the production figures for all of the major fuels. Clearly, barrels of oil, cubic feet of gas, and tons of coal and uranium cannot be added together, so each unit was first converted to the following standards of measure and then added together: (1) heating value, measured in terms of BTU content and (2) dollar value, measured by the price at the well-head, mine-mouth or other original production site.

The two measures should be considered concurrently for any overall analysis because each has drawbacks. For example, BTU (British Thermal Unit), or heating value, is only one of several factors that determine economic usefulness. Equal energy amounts of different fuels have different values to the consumer because of differing transport costs, environmental qualities, thermal efficiencies and other factors. To try to capture the other factors, price weights to determine dollar value equivalents were used since the price of a fuel should reflect its value to consumers and not just its heating value. Dollar value equivalents, however, have been distorted by price controls on oil and natural gas. Hence, the controls do not permit a true comparison because prices for all four fuels have not been determined in the same way.

Total energy production concentration was calculated by applying BTU and dollar weights to individual company and total domestic production data for crude oil and condensate, natural gas liquids, dry natural gas, bituminous coal and lignite, and uranium oxide. Heating-value and dollar-value market shares were then derived.

In order to measure the effect on concentration of oil firm production of coal and uranium, the concentration levels for energy production were compared with the concentration levels that would have been recorded if all coal and uranium were produced independently. This involved calculating, on a BTU and dollar basis, oil firm production of oil and gas only and measuring total energy concentration at the 4-, 8-, 15-, and 20-firm levels as if coal and uranium produced by oil companies had been produced by other firms.

SECTION I:

CONCENTRATION IN THE U.S. PETROLEUM INDUSTRY

I.A. CONCENTRATION MEASURES IN PETROLEUM PRODUCTION AND RESERVE HOLDINGS

I.A.1. U.S. CRUDE OIL, CONDENSATE, AND NATURAL GAS LIQUIDS PRODUCTION: 1955, 1960, 1965, 1970, 1975, 1979 and 1980

TABLE 21

U.S. CRUDE OIL, CONDENSATE AND NATURAL GAS LIQUIDS PRODUCTION 1980

(000 Bbls/day)

Company1/	Production	% of Total
Exxon	787.0	7.7
Standard of Ohio	715.82/	7.0
Atlantic Richfield	555.7	5.5
Shell	511.0	5.0
Standard of Indiana	464.0	4.6
Texaco	413.0	4.1
Gulf	364.2	3.6
Standard of California	335.0	3.3
Mobil	318.0	3.1
Getty	271.0	2.7
Phillips	269.7	2.7
Sun	206.1	2.0
Union	173.4	1.7
Marathon	168.3	1.7
Cities Service	154.7	1.5
Conoco	148.0	1.5
Amerada Hess	88.3	0.9
City of Long Beach	72.63/	0.7
Tenneco	72.5	0.7
Louisiana Land & Expl.4/	58.4	0.6
Champlin (Union Pacific)	52.3	0.5
Superior	51.5	0.5
Northern Natural Gas	44.8	0.4
Sante Fe Natural Res.	41.8	0.4
Mitchell	38.4	0.4
Aminoil (R.J. Reynolds)	37.1	0.4
Pennzoil	36.9	0.4
Diamond Shamrock	33.05/	0.3
Enserch	27.6	0.3
Southland	24.8	0.2
General Amer. Oil of Tex.	21.6	0.2
Texas Oil & Gas	19.56/	0.2
El Paso	19.2	0.2
Kerr-McGee	19.1	0.2
American Petrofina	18.2	0.2
Murphy	18.0	0.2
Allied Chemical	16.4	0.2
MAPCO	14.9	0.1
Husky	14.6	0.1
W.R. Grace	11.5	0.1
U.S. Total	10,161.0	100.0
Top 4	2,569.5	25.37/
Top 8	4,145.7	40.8
Top 15	5,706.9	56.2
Top 20	6,146.7	60.5
Top 30	6,534.9	64.3
Top 40	6,707.9	66.1

TABLE 21

U.S. CRUDE OIL, CONDENSATE AND NATURAL GAS LIQUIDS PRODUCTION 1980 (cont)

1/ Based on best available public information. Because some companies are privately-held and do not report production information publicly, there may be some companies which should be included in the top 40 list which are not included here.

2/ Includes a net average daily production from the Prudhoe Bay field of 696.3 thousand barrels per day and 19.4 thousand barrels per day from the continental U.S.

3/ The City of Long Beach, California, owns several oil fields and a large portion of the oil produced from these fields. It has contracts with Texaco, Exxon, Union, Mobil, Shell, Arco, and others to develop the fields. Since the portion of oil owned by Long Beach is not included in the contracted companies' net production figures, the City of Long Beach has been included as a separate, incorporated municipality.

4/ This figure includes Louisiana Land & Exploration's 100% interest in LLOXY (Louisiana Land Exploration Company, Inc.).

5/ Natural gas liquids production only.

6/ Sales.

7/ Individual percentages may not add to total due to rounding.

Source: 1980 company annual reports and 10-K's; telephone conversations with company personnel; Department of Energy (U.S. Total).

TABLE 22

U.S. CRUDE OIL, CONDENSATE AND NATURAL GAS LIQUIDS PRODUCTION 1979(r)

(000 Bbls/day)

Company[1]	Production	% of Total
Exxon	791.0	7.8
Standard of Ohio	611.0[2]	6.0
Atlantic Richfield	537.6	5.3
Standard of Indiana	494.0	4.9
Shell	481.0	4.7
Texaco	464.0	4.6
Gulf	382.1	3.8
Standard of California	344.0	3.4
Mobil	321.0	3.2
Getty	265.5	2.6
Phillips	263.0	2.6
Sun	209.9	2.1
Union	177.7	1.8
Marathon	174.4	1.7
Cities Service	167.4[3]	1.7
Conoco	159.0	1.6
Amerada Hess	90.6	0.9
Tenneco	77.0	0.8
City of Long Beach[4]	72.6	0.7
Louisiana Land & Expl.[5]	64.1	0.6
Superior	54.1	0.5
Champlin (Union Pacific)	51.6	0.5
Northern Natural Gas	47.7[6]	0.5
Sante Fe Natural Res.	45.1	0.4
Pennzoil	41.9	0.4
Aminoil (R.J. Reynolds)	36.8	0.4
Diamond Shamrock	33.1	0.3
Mitchell Energy & Devel.	32.9	0.3
Enserch	26.9	0.3
Southland Royalty	25.4	0.3
General Amer. Oil of Tex.	20.7[7]	0.2
American Petrofina	19.2	0.2
Texas Oil & Gas	18.3	0.2
Kerr-McGee	18.0	0.2
Allied Chemical	17.5	0.2
Murphy	16.7	0.2
El Paso	16.4	0.2
Husky	15.2	0.1
MAPCO	15.1[8]	0.1
Mesa	11.7	0.1
U.S. Total	10,136.0	100.0
Top 4	2,433.6	24.0[9]
Top 8	4,104.7	40.5
Top 15	5,683.6	56.1
Top 20	6,146.9	60.6
Top 30	6,542.4	64.5
Top 40	6,711.2	66.2

TABLE 22

U.S. CRUDE OIL, CONDENSATE AND NATURAL GAS LIQUIDS PRODUCTION 1979 (Cont'd)

1/ Based on best available public information. Because some companies are privately-held and do not report production information publicly, there may be some companies which should be included in the top 40 list which are not included here.

2/ Includes a net average daily production from the Prudhoe Bay field of 590.8 thousand b/d and 20.2 thousands b/d from the continental U.S.

3/ Natural gas liquids production excludes volumes processed by others.

4/ This figure includes Louisiana Land & Exploration's 100% interest in LLOXY (Lousiana Land Offshore Exploration Company, Inc.).

5/ The City of Long Beach, California, owns several oil fields and a large portion of the oil produced from these fields. It has contracts with Texaco, Exxon, Union, Mobil, Shell, Arco, and others to develop the fields. Since the portion of oil owned by Long Beach is not included in the contracted companies' net production figures, the City of Long Beach has been included as a separate, incorporated municipality.

6/ Natural gas liquids production only.

7/ Net sales.

8/ Sales.

9/ Individual percentages may not add to total due to rounding.

(r) Revised September 1981

Source: 1979 company annual reports and 10-K's; telephone conversations with company personnel; Department of Energy (U.S. Total).

TABLE 23

U.S. CRUDE OIL, CONDENSATE AND NATURAL GAS LIQUIDS PRODUCTION, 1975(r)

(000 Bbls/day)

Company1/	Production	Percent of Total U.S. Production
Exxon	846.0	8.5
Texaco	665.0	6.7
Shell	554.0	5.5
Standard of Indiana	534.0	5.3
Gulf	425.5	4.3
Standard of California	383.4	3.8
Atlantic Richfield	370.3	3.7
Mobil	342.0	3.4
Getty2/	288.4	2.9
Union	255.8	2.6
Phillips	244.3	2.4
Sun	228.7	2.3
Cities Service	200.8	2.0
Continental	194.0	1.9
Marathon	174.9	1.7
City of Long Beach3/	122.2	1.2
Amerada Hess	98.5	1.0
Louisiana Land & Exploration	73.2	0.7
Tenneco	72.3	0.7
Superior	54.1	0.5
U.S. Total	10,007.5	100.0
Top 4	2,599.0	26.04/
Top 8	4,120.2	41.2
Top 15	5,707.1	57.0
Top 20	5,127.4	61.2

1/ Based on best available public information. Because some companies are privately-held and do not report production information publicly, there may be some companies which should be included in this list which are not included here.

2/ Includes production of Skelly Oil Co.

3/ The City of Long Beach, California owns several oil fields and a large portion of the oil produced from these fields. It has contracts with Texaco, Exxon, Union, Mobil, Shell, Arco, and others to develop the fields. Since the portion of oil owned by Long Beach is not included in the contracted companies' net production figures, the City of Long Beach has been included as a separate, incorporated municipality.

4/ Individual percentages may not add to totals because of rounding.

(r) Revised September 1980.

Source: 1975 Company Annual Reports and Statistical Supplements; 1975 Annual Review of California Crude Oil Production, Conservation Committee of California Oil Producers (City of Long Beach Data); U.S. Bureau of Mines (U.S. Total)

TABLE 24

U.S. CRUDE OIL, CONDENSATE AND NATURAL GAS LIQUIDS PRODUCTION, 1970 (r)

(000 Bbls/day)

Company	Production	Percent of U.S. Total
Standard of New Jersey	946.0	8.4
Texaco	808.0	7.2
Gulf	626.0	5.5
Shell	595.0	5.3
Standard of California	474.4	4.2
Standard of Indiana	466.0	4.1
Atlantic Richfield	405.7	3.6
Mobil	385.0	3.4
Getty 1/	317.0	2.8
Union	314.0	2.8
Phillips	270.7	2.4
Sun	258.8	2.3
Cities Service	202.7	1.8
Continental	188.0	1.7
Marathon	174.9	1.5
City of Long Beach 2/	163.5	1.4
Amerada Hess	95.7	0.8
Tenneco	87.0	0.8
Superior	65.2	0.6
Louisiana Land & Expl.	62.0	0.5
U.S. Total	11,297.0	100.0
Top 4	2,975.0	26.3 3/
Top 8	4,706.1	41.7
Top 15	6,432.2	56.9
Top 20	6,905.6	61.1

1/ Includes production of Skelly Oil Company.

2/ The City of Long Beach, California, owns several oil fields and a large portion of the oil produced from these fields. It has contracts with Texaco, Humble, Union, Mobil, Shell, Atlantic Richfield, and others to develop the fields. Since the portion of oil owned by Long Beach is not included in the contracted companies' net production figures, the City of Long Beach has been included as a separate, incorporated municipality.

3/ Individual percentages may not add to totals due to rounding.

(r) Revised September 1980.

Source: Company Annual Reports and Statistical Supplements; NPN, Factbook, Mid-May issue, 1971; 1970 Annual Review of California Crude Production, Conservation Committee of California Oil Producers (City of Long Beach Data); U.S. Bureau of Mines (U.S. Total)

TABLE 25

U.S. CRUDE OIL, CONDENSATE AND NATURAL GAS LIQUIDS PRODUCTION, 1965

(000 Bbls/day)

Company	Production	Percent of Total U.S. Production
Standard of New Jersey	639.0	7.1
Texaco	604.0	6.7
Gulf	482.7	5.4
Shell	431.0	4.8
Standard of California	416.0	4.6
Standard of Indiana	390.0	4.3
Mobil	269.0	3.0
Phillips	241.7	2.7
Union	200.2	2.2
Continental	180.0	2.0
Sinclair	154.7	1.7
Tidewater1/	140.0	1.6
Cities Service	139.8	1.6
Sun	132.62/	1.5
Atlantic Refining	115.0	1.3
Marathon	112.1	1.2
Amerada	83.8	0.9
Sunray DX	83.6	0.9
Tenneco	73.8	0.8
Skelly1/	70.1	0.8
U.S. Total	9,014.0	100.0
Top 4	2,156.7	23.93/
Top 8	3,473.4	38.5
Top 15	4,535.7	50.3
Top 20	4,959.1	55.0

1/ Getty merged with Skelly & Tidewater in 1967.

2/ Includes an insignificant amount of Canadian production.

3/ Individual percentages may not add to totals because of rounding.

Sources: Jane Atwood, U.S. Petroleum Market Volumes and Market Shares: Individual Conmpany Data, as compiled from: Company Annual Reports and Statistical Supplements; National Petroleum News, Mid-May Issue, 1966; Petroleum Engineer International, Energy Management Report, May 19677; FTC, Concentration Levels and Trends in the Energy Sector of the U.S. Economy, March 1974; U.S. Bureau of Mines (U.S. Total).

TABLE 26

U.S. CRUDE OIL, CONDENSATE AND NATURAL GAS LIQUIDS PRODUCTION, 1960 (r)

(000 Bbls/day)

Company	Production	Percent of Total U.S. Production
Texaco	477.6	6.0
Standard of New Jersey	439.0	5.5
Gulf	386.2	4.8
Shell	354.9	4.5
Standard of California	297.8	3.7
Standard of Indiana	286.0	3.6
Phillips	222.5	2.8
Socony-Mobil	204.1 1/	2.6
Continental	171.0	2.1
Sinclair	139.0 2/	1.7
Cities Service	125.2	1.6
Sun	114.1 2/	1.4
Ohio Oil (Marathon)	104.8	1.3
Union	102.9	1.3
Atlantic Refining	97.7	1.2
Tidewater	89.7	1.1
Amerada	80.9 1/ 2/	1.0
Superior	79.7 1/	1.0
Sunray Mid-Continent	71.2	0.9
Skelly	69.0	0.9
U.S. Total	7,964.0	100.0
Top 4	1,657.7	20.8 3/
Top 8	2,668.1	33.5
Top 15	3,522.8	44.2
Top 20	3,913.3	49.1

1/ Crude oil only.

2/ Includes an insignificant amount of Canadian production.

3/ Individual percentages may not add to totals because of rounding.

(r) Revised September 1980.

Sources: Company Annual Reports and Statistical Supplements; National Petroleum News, Mid-May Issue, 1961; FTC, Concentration Levels and Trends in the Energy Sector of the U.S. Economy, March 1974; U.S. Bureau of Mines (U.S. Total).

TABLE 27

U.S. CRUDE OIL, CONDENSATE AND NATURAL GAS LIQUIDS PRODUCTION, 1955

(000 Bbls/day)

Company	Production	Percent of Total U.S. Production
Standard of New Jersey	452.0	6.0
Texas Company	335.6[1]	4.4
Shell	311.3	4.1
Standard of California	269.3	3.6
Standard of Indiana	260.9	3.4
Gulf	241.7	3.2
Socony-Mobil	229.7[1]	3.0
Phillips	192.8	2.5
Continental	146.2	1.9
Sinclair	135.8	1.8
Sun	115.4[2]	1.5
Cities Service	113.6	1.5
Union	110.7	1.5
Ohio Oil	103.7	1.4
Tidewater	89.6[1]	1.2
Atlantic Refining	89.0[1]	1.2
Amerada	85.6[1]	1.1
Sunray Mid-Continent	80.1[1]	1.1
Skelly	75.0	1.0
Pure	66.9[1]	0.9
U.S. Total	7,578.0	100.0
Top 4	1,368.2	18.1[3]
Top 8	2,293.3	30.3
Top 15	3,108.3	41.0
Top 20	3,504.9	46.3

[1] Crude oil only.

[2] Includes an insignificant amount of Canadian production.

[3] Individual percentages may not add to totals because of rounding.

Sources: Company Annual Reports and Statistical Supplements; National Petroleum News, Mid-May Issue, 1956; FTC, Concentration Levels and Trends in the Energy Sector of the U.S. Economy, March, 1974; U.S. Bureau of Mines (U.S. Total).

I.A.2. U.S. NATURAL GAS PRODUCTION: 1955, 1960, 1965, 1970, 1975, 1979 and 1980

TABLE 28

U.S. NATURAL GAS PRODUCTION, 1980
(Millions of Cubic Feet)

Company	Production	% of Total
Exxon	1,231,145	6.4
Texaco	955,570	5.0
Standard of Indiana	820,520	4.2
Mobil	711,750	3.7
Gulf	660,030	3.4
Shell	649,700	3.4
Standard of California	448,950	2.3
Marathon	448,552	2.3
Atlantic Richfield	447,855	2.3
Union	425,225	2.2
Tenneco	406,789	2.1
Sun	382,520[1]	2.0
Phillips	344,195	1.8
Getty	312,148	1.6
Superior	296,127	1.5
Cities Service	296,125[2]	1.5
El Paso	286,000	1.5
Conoco	283,970	1.5
Pennzoil	214,433	1.1
Columbia Gas	156,698	0.8
Panhandle Eastern	146,942	0.8
Amerada Hess	138,728	0.7
Coastal	124,557	0.6
Consolidated Nat. Gas	119,000	0.6
Louisiana Land & Expl.	116,912[3]	0.6
Champlin (Union Pacific)	111,325	0.6
Diamond Shamrock	106,915	0.6
Mesa	106,013	0.5
Aminoil (R.J.Reynolds)	95,776	0.5
Houston Oil & Min.	86,004	0.4
Kerr-McGee	83,105	0.4
Southland Royalty	81,593	0.4
Worldwide Energy	73,100[4]	0.4
Texas Oil and Gas	67,237	0.3
Enserch	64,339	0.3
Murphy	54,522	0.3
Houston Natural Gas	53,697	0.3
Allied Chemical	51,000	0.3
Mitchell Energy & Devel.	49,640	0.3
Forest Oil	42,072	0.2
U.S. Total	19,348,000	100.0
Top 4	3,718,985	19.2[5]
Top 8	5,926,217	30.6
Top 15	8,541,076	44.1
Top 20	9,778,302	50.5
Top 30	10,930,474	56.5
Top 40	11,550,779	59.7

TABLE 28

U.S. NATURAL GAS PRODUCTION, 1980 (cont.)

1/ Sales.

2/ Wet gas.

3/ Includes 100% of LLOXY (Louisiana Land Offshore Exploration Company, Inc.).

4/ Includes royalty gas.

5/ Individual percentages may not add to totals due to rounding.

Source: 1980 company annual reports and 10-K's,
American Gas Association (U.S. Total).

TABLE 29

U.S. NATURAL GAS PRODUCTION, 1979(r)
(Millions of Cubic Feet)

Company	Production	% of Total
Exxon	1,358,895	6.9
Texaco	1,157,415	5.9
Standard of Indiana	907,010	4.6
Mobil	742,045	3.8
Gulf	692,916	3.5
Shell	665,395	3.4
Atlantic Richfield	486,910	2.5
Union	438,438	2.2
Standard of California	433,255	2.2
Tenneco	411,579	2.1
Sun	397,485	2.0
Phillips	391,280	2.0
Getty	318,536	1.6
Cities Service	316,127	1.6
Superior	313,127	1.6
Conoco	304,410	1.5
El Paso	291,000	1.5
Pennzoil	214,288	1.1
Columbia Gas	166,498	0.8
Panhandle Eastern	158,025	0.8
Marathon	157,194	0.8
Coastal	129,694	0.7
Amerada Hess	120,251	0.6
Consolidated Nat. Gas	118,602	0.6
Mesa	112,106	0.6
Diamond Shamrock	106,398	0.5
Louisiana Land & Expl.	105,742[1]	0.5
Champlin (Union Pacific)	103,660[2]	0.5
Houston Oil & Min.	95,606	0.5
Kerr-McGee	86,182[3]	0.4
Southland Royalty	85,927	0.4
Aminoil (R.J. Reynolds)	69,277	0.4
Enserch	64,281	0.3
Texas Oil & Gas	61,489	0.3
Ashland	55,845	0.3
Allied Chemical	54,200	0.3
Mitchell Energy & Devel.	51,100	0.3
Murphy	45,966	0.2
Houston Natural Gas	43,927	0.2
Forest Oil	43,053	0.2
U.S. Total	19,663,000	100.0
Top 4	4,165,365	21.2[4]
Top 8	6,449,024	32.8
Top 15	9,030,413	45.9
Top 20	10,164,634	51.7
Top 30	11,300,069	57.5
Top 40	11,875,134	60.4

TABLE 29

U.S. NATURAL GAS PRODUCTION, 1979 (cont'd)

1/ Includes 100% working interest in LLOXY (Louisiana Land Exploration Company, Inc.).

2/ Net before royalty.

3/ Sales.

4/ Individual percentages may not add to total due to rounding.

(r) Revised September 1981

Source: 1980 company annual reports and Form 10-K (Monthly, Energy Review (U.S. Total).

TABLE 30

U.S. NET NATURAL GAS PRODUCTION, 1975 (r)
(Millions of Cubic Feet)

Company	Production	Percent of U.S. Total
Exxon Corp.	1,802,005	9.0
Texaco	1,357,800	6.8
Standard of Indiana	960,315	4.8
Mobil	749,345	3.7
Gulf	714,816	3.5
Shell	646,050	3.2
Norris	581,490	2.9
Atlantic Richfield	578,890	2.9
Union	505,270	2.5
Phillips	478,880	2.4
Sun	465,740	2.3
Standard of California	456,250	2.3
Tenneco	409,847	2.0
Getty	406,851	2.0
Cities Service	384,893	1.9
Continental	313,900	1.6
Superior	248,235	1.2
El Paso	238,000	1.2
Pennzoil	197,499	1.0
Panhandle Eastern	188,000	0.9
U.S. Total	20,108,661	100.0
Top 4	4,869,465	24.2[1/]
Top 8	7,390,711	36.8
Top 15	10,498,442	52.2
Top 20	11,684,076	58.1

1/ Individual percentages may not add to totals due to rounding.

(r) Revised September 1980.

Source: Company annual reports and Form 10-K's; company interviews; U.S. Bureau of Mines (U.S. Total).

TABLE 31

U.S. NET NATURAL GAS PRODUCTION, 1970(r)
(Millions of Cubic Feet)

Company	Production	Percent of U.S. Total
Exxon	2,003,120[1]	9.1
Texaco	1,399,410[1]	6.4
Standard of Indiana	1,114,710	5.1
Gulf	1,006,305	4.6
Shell	930,020	4.2
Mobil	813,585	3.7
Atlantic Richfield	728,905	3.3
Phillips	580,715	2.7
Union	567,247	2.6
Standard of California	537,645	2.5
Sun	525,965[2]	2.4
Getty	439,832	2.0
Cities Service	368,614	1.7
Superior	338,836	1.5
Continental	308,060	1.4
Tenneco	291,529	1.3
El Paso	219,730	1.0
Pennzoil-United	215,715	1.0
Marathon	171,597	0.8
Amerada Hess	160,892	0.7
U.S. Total	21,920,642	100.0
Top 4	5,523,545	25.2[3]
Top 8	8,576,770	39.1
Top 15	11,662,969	53.2
Top 20	12,722,432	58.0

1/ Natural gas sales.

2/ Includes Canadian production.

3/ Individual percentages may not add to totals due to rounding.

(r) Revised September 1980.

Source: Company annual reports and Form 10-K's; Bureau of Mines (U.S. Total).

TABLE 32

U.S. NET NATURAL GAS PRODUCTION, 1965
(Millions of Cubic Feet)

Company	Production	Percent of Total U.S. Production
Exxon Corporation	1,168,000[1]	7.3
Standard Oil of Indiana	813,220	5.1
Texaco, Inc.	741,680	4.6
Mobil Oil Corporation	615,395	3.8
Gulf Oil Corporation	597,335	3.7
Shell Oil Company	593,490	3.7
Phillips Petroleum Company	485,450	3.0
Standard Oil of California	377,410	2.4
Union Oil of California	332,770	2.1
Sun Oil Company	329,854[2]	2.1
Cities Service Company	296,088	1.8
Superior Oil	275,246[3]	1.7
Atlantic Richfield Company	259,855[4]	1.6
Continental Oil	252,215	1.6
Sinclair Oil	243,152[4]	1.5
Tidewater Oil Company	189,800	1.2
United Gas Corporation	185,055[2]	1.2
Tenneco	137,970	0.9
Sunray-DX	135,591[4]	0.8
Amerada-Hess	132,922	0.8
U.S. Total	16,039,753	100.0
Top 4	3,338,295	20.8[5]
Top 8	5,391,980	33.6
Top 15	7,381,160	46.0
Top 20	8,162,498	50.9

1/ Natural gas sales.

2/ Includes Canadian production.

3/ Gross.

4/ Worldwide.

5/ Individual percentages may not add to totals due to rounding.

Source: Company Annual Reports; Petroleum Engineer International; Bureau of Mines (U.S. Total).

TABLE 33

U.S. NET NATURAL GAS PRODUCTION, 1960(r)
(Millions of Cubic Feet)

Company	Production	Percent of Total
Exxon Corporation	574,328[1]	4.5
Standard of Indiana	573,050	4.5
Phillips Petroleum	501,853	3.9
Texaco, Inc.	499,971[1]	3.9
Mobil Oil	398,945[2]	3.1
Shell Oil	389,384	3.0
Gulf Oil	365,000[1]	2.9
Cities Service	323,564	2.5
Sun Oil	273,694	2.1
Standard of California	349,126	2.0
Superior Oil	233,999[2]	1.8
United Gas Corporation	204,000[3]	1.6
Atlantic Richfield	186,040	1.5
Continental Oil	161,477	1.3
Sinclair Oil	155,941	1.2
Sunray DX	151,663[3]	1.2
Tidewater Oil	139,517[2][3]	1.1
Union Oil of California	124,963	1.0
Skelly Oil	124,493[2][3]	1.0
Pure Oil	114,614[3]	0.9
U.S. Total	12,771,038	100.0
Top 4	2,149,202	16.8[4]
Top 8	3,626,095	28.4
Top 15	5,090,372	39.9
Top 20	5,745,622	45.0

[1] Natural gas sales.

[2] Gross.

[3] Includes Canadian production.

[4] Individual percentages may not add to totals due to rounding.

(r) Revised September 1980.

Source: Company annual reports; Moody's Industrial Manual; Bureau of Mines (U.S. Total).

TABLE 34

U.S. NET NATURAL GAS PRODUCTION, 1955
(Millions of Cubic Feet)

Company	Production	Percent of Total U.S. Production
Exxon Corporation	697,000[1]	7.4
Phillips Petroleum Company	631,039	6.7
Standard Oil of Indiana	397,850[1]	4.2
Shell Oil Company	319,000[1]	3.4
Texaco, Inc.	293,726[1]	3.4
Mobil Oil Corporation	282,604[3]	3.0
Cities Service Company	247,290	2.6
Gulf Oil Corporation	241,000[3]	2.6
United Gas Corporation	237,000[1] [5]	2.5
Sun Oil Company	179,749[1]	1.9
Standard Oil of California	149,529[1]	1.6
Atlantic-Richfield Company	135,382	1.4
Continental Oil	127,609[4]	1.4
Skelly Oil Company	120,455[4]	1.3
Sunray-DX	113,877[5]	1.2
Sinclair Oil	108,575[1]	1.1
Superior Oil	106,101[5]	1.1
Marathon Oil	103,034	1.1
Tidewater Oil Company	100,148[4]	1.1
Pure Oil Company	98,234	1.0
U.S. Total	9,405,351	100.0
Top 4	2,044,889	21.7[2]
Top 8	3,109,509	33.1
Top 15	4,173,110	44.4
Top 20	4,687,202	49.9

[1] Natural gas sales.

[2] Individual percentages may not add to totals due to rounding.

[3] Gross.

[4] Worldwide production.

[5] Includes Canadian production.

Source: Company annual reports; Moody's Industrial Manual; Bureau of Mines (U.S. Total)

I.A.3. CRUDE OIL, CONDENSATE, AND NATURAL GAS LIQUIDS RESERVES: 1975, 1979 and 1980

TABLE 35

PROVEN U.S. CRUDE OIL, CONDENSATE AND NATURAL GAS LIQUIDS RESERVES, 1980

(Millions of Barrels)

Company	Reserves[1]	% of Total
Standard of Ohio	3,659.3[2]	11.4
Exxon	2,854.0	8.9
Atlantic Richfield	2,559.0	8.0
Shell	2,274.0	7.1
Standard of Indiana	1,663.0	5.2
Getty	1,372.0	4.3
Standard of California	1,292.0	4.0
Texaco	1,229.0	3.8
Gulf	920.0	2.9
Mobil	890.0	2.8
Sun	751.0	2.3
Marathon	682.9	2.1
Union	528.0	1.6
Phillips	498.0	1.6
Conoco	403.0	1.3
Cities Service	299.5	0.9
Amerada Hess	250.9	0.8
Tenneco	225.9	0.7
El Paso	149.0	0.5
Santa Fe Natural Res.	141.0	0.4
Aminoil (R.J. Reynolds)	130.9	0.4
Champlin (Union Pacific)	129.1	0.4
Superior	127.3	0.4
Pennzoil[3]	96.8	0.3
Southland Royalty	94.8	0.3
Mitchell Energy & Dev.	92.5	0.3
Louisiana Land & Expl.	73.3[4]	0.2
Texas Oil & Gas	66.2	0.2
Kerr-McGee	63.1	0.2
Enserch	62.0	0.2
W. R. Grace	56.2	0.2
General American Crude	54.5	0.2
City of Long Beach[5]	54.3	0.2
Allied Chemical	47.0	0.1
Murphy	45.9	0.1
MAPCO	41.2	0.1
Occidental	37.0	0.1
Diamond Shamrock	36.0	0.1
American Petrofina	34.0	0.1
Husky	32.2	0.1
U.S. Total	32,100.0	100.0
Top 4	11,346.3	35.3[6]
Top 8	16,902.3	52.7
Top 15	21,575.2	67.2
Top 20	22,641.5	70.5
Top 30	23,577.5	73.5
Top 40	24,015.8	74.8

TABLE 35

PROVEN U.S. CRUDE OIL, CONDENSATE AND NATURAL GAS LIQUIDS RESERVES, 1980 (cont'd)

1/ These figures include proven developed and undeveloped reserves.

2/ Includes Prudhoe Bay field reserves of 3,600.0 million barrels (representing Sohio's net interest in the field after deducting 12-1/2% royalty interest due to the State of Alaska but before deduction of any profits interest earned by BP), and 59.3 million barrels from the continental U.S.

3/ Includes 100% of PLATO (Pennzoil Louisiana and Texas Offshore Inc.).

4/ Includes company's equity in LLOXY (Louisiana Land Offshore Exploration Company, Inc.).

5/ The City of Long Beach, California, owns several oil fields and a large portion of the oil produced from these fields. It has contracts with Texaco, Exxon, Union, Mobil, Shell, Arco, and others to develop the fields. Since the portion of oil owned by Long Beach is not included in the contracted companies' net production figures, the City of Long Beach has been included as a separate, incorporated municipality.

6/ Individual percentages may not add to total due to rounding.

Source: 1980 Company annual reports and 10-K's, Arthur D. Little, The Dynamics of the U.S. Oil and Gas Exploration Industry, June 1981.

TABLE 36

PROVEN U.S. CRUDE OIL, CONDENSATE AND NATURAL GAS LIQUIDS RESERVES, 1979(r)

(Millions of Barrels)

Company	Reserves[1]	% of Total
Standard of Ohio	3,888.4[2]	11.9
Exxon	2,997.0	9.2
Atlantic Richfield	2,588.0	7.9
Shell	2,211.0	6.8
Standard of Indiana	1,653.0	5.1
Getty	1,438.0	4.4
Standard of California	1,316.0	4.0
Texaco	1,316.0	4.0
Gulf	978.0	3.0
Mobil	869.0	2.7
Marathon	726.8	2.2
Sun	666.0	2.0
Union	526.0	1.6
Phillips	508.0	1.6
Conoco	398.0	1.2
Cities Service	317.2	1.0
Amerada Hess	264.0	0.8
Tenneco	211.5	0.6
El Paso	152.0	0.5
Santa Fe Natural Res.	137.4	0.4
Superior	131.5	0.4
Aminoil (R.J. Reynolds)	129.5	0.4
Southland Royalty	126.7	0.4
Champlin (Union Pacific)	120.5	0.4
Pennzoil[3]	98.1	0.3
Louisiana Land & Expl.	86.5[4]	0.3
Mitchell Energy & Dev.	80.3	0.2
Enserch	58.9	0.2
General Amer. Oil of Tex.	58.7	0.2
Kerr-McGee	57.1	0.2
Texas Oil & Gas	54.6	0.2
City of Long Beach[5]	51.5	0.2
Allied Chemical	51.0	0.2
Murphy	48.5	0.1
W. R. Grace	45.8	0.1
MAPCO	42.5	0.1
Diamond Shamrock	37.2	0.1
American Petrofina	35.9	0.1
Occidental	29.0	0.1
Quaker State	28.5	0.1
U.S. Total	32,706.6	100.0
Top 4	11,684.4	35.7[6]
Top 8	17,407.4	53.2
Top 15	22,079.2	67.5
Top 20	23,161.3	70.8
Top 30	24,109.1	73.7
Top 40	24,533.6	75.0

TABLE 36

PROVEN U.S. CRUDE OIL, CONDENSATE AND NATURAL GAS LIQUIDS RESERVES, 1979 (cont'd)

1/ These figures include proven developed and undeveloped reserves.

2/ Includes Prudhoe Bay field reserves of 3,837.1 million barrels (representing Sohio's net interest in the field after deducting 12-1/2% royalty interest due to the State of Alaska but before deduction of any profits interest earned by BP), and 51.3 million barrels from the continental U.S.

3/ Includes 100% of Pennzoil Louisiana and Texas Offshore Inc. (PLATO)

4/ Includes company's equity in LLOXY (Louisiana Land Offshore Exploration Company, Inc.).

5/ The City of Long Beach, California, owns several oil fields and a large portion of the oil produced from these fields. It has contracts with Texaco, Exxon, Union, Mobil, Shell, Arco, and others to develop the fields. Since the portion of oil owned by Long Beach is not included in the contracted companies' net production figures, the City of Long Beach has been included as a separate, incorporated municipality.

6/ Individual percentages may not add to total due to rounding.

(r) Revised September 1981

Source: 1979 Company annual reports and 10-K's. "Reserves of Crude Oil, Natural Gas Liquids and Natural Gas in the United States and Canada as of December 31, 1979, Vol. 34, June 1980, API.

TABLE 37

PROVEN U.S. CRUDE OIL, CONDENSATE AND NATURAL GAS LIQUIDS RESERVES, 1975 (r)

(Millions of Barrels)

Company	Total Reserves	Percent of Total U.S. Reserves
Standard of Ohio	4,450	11.7
Exxon	4,030	10.3
Texaco	2,841	7.3
Atlantic Richfield	2,720	5.8
Standard of Indiana	2,242	5.8
Shell	1,859	4.8
Standard of California	1,767	4.5
Getty	1,636	4.2
Gulf	1,280	3.3
Mobil	1,000	2.6
Sun	882	2.3
Marathon	779	2.0
Phillips Petroleum	696[1]	1.8
Union	611[2]	1.6
Amerada-Hess	540	1.4
Continental	519	1.3
Cities Service	461	1.2
Tenneco	224	0.6
Superior	217	0.5
Louisiana Land & Exploration	187	0.5
U.S. Total	38,950	100.0
Top 4	14,131	36.3[3]
Top 8	21,635	55.6
Top 15	27,423	70.4
Top 20	29,031	74.5

[1] Excludes contracts.

[2] Excludes natural gas liquids.

[3] Individual percentage may not add to totals because of rounding.

(r) Revised September 1980.

Source: Company Annual Reports; John S. Herold, Inc., Oil *Industry Comparative Appraisals*; House Committee on Mines and Mining; company interviews; American Petroleum Institute (U.S. Total).

I.A.4. PROVEN U.S. NATURAL GAS RESERVES: 1975, 1979 and 1980

TABLE 38

PROVEN U.S. NATURAL GAS RESERVES, 1980
(Billion Cu.Ft.)

Company	Reserves[1]	% of Total
Exxon	16,687.0	8.6
Atlantic Richfield	13,546.0	7.0
Standard of Indiana	8,434.0	4.4
Texaco	7,555.0	3.9
Shell	7,149.0	3.7
Standard of Ohio	6,705.1[2]	3.5
Mobil	6,205.0	3.2
El Paso	6,174.0	3.2
Union	5,781.0	3.0
Standard of California	5,344.0	2.8
Gulf	4,543.0	2.4
Sun	3,424.0	1.8
Phillips	3,363.0	1.7
Tenneco	3,258.9	1.7
Cities Service	2,939.1	1.5
Conoco	2,660.0	1.4
Getty	2,603.0	1.3
Marathon	2,128.8	1.1
Superior	1,912.0	1.0
Champlin (Union Pacific)	1,754.5	0.9
Panhandle Eastern	1,413.7	0.7
Northwest Energy	1,248.0	0.6
Coastal States	1,224.8	0.6
Amerada Hess	1,123.7	0.6
Consolidated Nat. Gas	1,101.0	0.6
Pennzoil	1,079.1[3]	0.6
Texas Oil & Gas	1,072.1	0.6
Diamond Shamrock	861.6	0.4
Mesa	856.8	0.4
Kerr-McGee	815.1	0.4
Belco	656.9	0.3
Southland Royalty	628.6	0.3
Mountain Fuel	565.0	0.3
Aminoil (R.J. Reynolds)	555.7	0.3
Enserch	516.4	0.3
Mitchell	507.2	0.3
Houston Oil & Mineral	449.7	0.2
Louisiana Land & Expl.	428.6[4]	0.2
Allied Chemical	417.0	0.2
Equitable Gas	414.6	0.2
U.S. Total	193,100.0	100.0
Top 4	46,222.0	23.9[5]
Top 8	72,455.1	37.5
Top 15	101,108.1	52.4
Top 20	112,166.4	58.1
Top 30	122,962.3	63.7
Top 40	128,102.0	66.3

TABLE 38

PROVEN U.S. NATURAL GAS RESERVES, 1980 (cont'd)

1/ These figures include both proven developed and undeveloped reserves.

2/ Includes Prudhoe Bay field reserves of 6,435.0 billion cubic feet. Other domestic reserves are 270.1 billion cubic feet.

3/ Includes the company's 100% interest in PLATO (Pennzoil Louisiana and Texas Offshore Inc.).

4/ Includes the company's 100% interest in LLOXY (Louisiana Land Offshore Exploration Company, Inc.).

5/ Individual percentages may not add to total due to rounding.

Source: Company annual reports and 10k's, Arthur D. Little, The Dynamics of the U.S. Oil and Gas Exploration Industry, June 1981.

TABLE 39

PROVEN U.S. NATURAL GAS RESERVES, 1979(r)

(Billion Cu.Ft.)

Company	Reserves[1]	% of Total
Exxon	17,200.0	8.8
Atlantic Richfield	13,354.0	6.9
Texaco	9,583.0	4.9
Standard of Indiana	8,654.0	4.4
Shell	7,065.0	3.6
Standard of Ohio	6,672.0[2]	3.4
Mobil	6,498.0	3.3
Union	6,038.0	3.1
El Paso	6,015.0	3.1
Standard of California	5,300.0	2.7
Gulf	5,052.0	2.6
Phillips	3,656.0	1.9
Tenneco	3,319.4	1.7
Cities Service	3,197.4	1.6
Sun	3,195.0	1.6
Conoco	2,681.0	1.4
Getty	2,546.0	1.3
Marathon	2,176.6	1.1
Superior	1,891.0	1.0
Panhandle Eastern	1,480.9	0.8
Champlin (Union Pacific)	1,463.6	0.8
Northwest	1,286.0	0.7
Coastal	1,283.8	0.7
Southland Royalty	1,274.8	0.7
Amerada Hess	1,167.9	0.6
Consolidated Nat. Gas	1,139.0	0.6
Pennzoil	1,109.0[3]	0.6
Texas Oil & Gas	1,010.8	0.5
Diamond Shamrock	846.9	0.4
Kerr-McGee	826.5	0.4
Mesa	809.4	0.4
Houston Oil & Mineral	698.5	0.4
Belco	682.9	0.4
Mountain Fuel	592.0	0.3
Aminoil (R.J. Reynolds)	590.9	0.3
Louisiana Land & Expl.	527.0[4]	0.3
Enserch	491.1	0.3
Mitchell Energy & Dev.	454.0	0.2
Allied Chemical	428.1	0.2
Houston Natural Gas	422.2	0.2
U.S. Total	194,900.0	100.0
Top 4	48,791.0	25.0[5]
Top 8	75,064.0	38.5
Top 15	104,798.8	53.7
Top 20	115,574.3	59.3
Top 30	126,982.6	65.2
Top 40	132,678.6	68.1

TABLE 39

PROVEN U.S. NATURAL GAS RESERVES, 1979 (cont'd)

1/ These figures include both proven developed and undeveloped reserves.

2/ Includes Prudhoe Bay field reserves of 6,408 billion cubic feet. Other domestic reserves are 264 billion cubic feet.

3/ Includes the company's 100% interest in PLATO (Pennzoil Louisiana and Texas Offshore, Inc.).

4/ Includes the company's 100% interest in LLOXY (Louisiana Land Offshore Exploration Company, Inc.).

5/ Individual percentages may not add to total due to rounding.

(r) Revised September 1981

Source: Company annual reports and 10k's; Arthur D. Little, The Dynamics of the Oil and Gas Exploration Industry, June 1981.

TABLE 40

PROVEN U.S. NATURAL GAS RESERVES, 1975 (r)
(Billion Cu. Ft.)

Company	Reserves	Percent of U.S. Total
Exxon	22,655	9.9
Texaco	15,500	6.8
Atlantic Richfield	12,520	5.5
Standard of Indiana	10,680	4.7
Mobil	7,600[1]	3.3
Panhandle Eastern	7,386[2]	3.2
Union	7,182[2]	3.1
Standard of California	7,169	3.1
Shell	6,935	3.0
Gulf	6,579	2.9
Standard of Ohio	6,412[3]	2.8
Phillips	5,334	2.3
El Paso	5,200	2.3
Cities Service	4,600[4]	2.0
Sun	4,100	1.8
Tenneco	3,989	1.7
Superior	3,400	1.5
Getty	3,369[4]	1.5
Continental	3,137	1.4
Marathon	2,290	1.0
U.S. Total	228,200[5]	100.0
Top 4	61,355	26.9[6]
Top 8	90,692	39.7
Top 15	129,852	56.9
Top 20	146,037	64.0

[1] Includes purchase contracts.

[2] Non-domestic reserve represents an insignificant share of total reserves.

[3] This figure comprises Prudhoe Bay oil field reserves of 6,145 BCF (representing Sohio's net interest in the field, after deducting a 12.5% royalty interest due the State of Alaska, but before deduction of any net profits interest of BP) and other continental U.S. reserves of 267 BCF.

[4] Includes Canadian reserves.

[5] This total includes 26 trillion cu. ft. of reserves in the Prudhoe Bay oil field, Alaska.

[6] Individual percentages may not add to totals due to rounding.

(r) Revised September 1980.

Source: Company annual reports, Oil Industry Comparative Appraisals, published by John S. Herold, Inc.; House Committee on Mines and Mining; Company Interview; American Gas Association (U.S. Total)

I.B. CONCENTRATION MEASURES IN PETROLEUM REFINING

I.B.1. U.S. REFINING CAPACITY: 1950, 1960, 1965, 1970, 1975, 1979 and 1980

TABLE 41

U.S. REFINING CAPACITY, 1980 [1]
(000 Bbls/day)

Company	Capacity	% of Total
Exxon	1,557.0	8.5
Standard of California	1,383.7	7.6
Standard of Indiana	1,238.0	6.8
Shell	1,123.4	6.1
Texaco	1,059.0	5.8
Gulf	949.2[2]	5.2
Mobil	835.7	4.6
Atlantic Richfield	811.2	4.4
Sun	521.5[3]	2.9
Marathon	513.0	2.8
Union	490.0	2.7
Ashland	462.9	2.5
Standard of Ohio	452.0	2.5
Conoco	448.1	2.5
Phillips	397.0	2.2
Cities Service	291.0	1.6
Champlin (Union Pacific)	283.8	1.6
Coastal	278.0	1.5
Getty	261.5	1.4
Tosco	260.5	1.4
Dow	190.0	1.0
Kerr-McGee	187.4	1.0
American Petrofina	150.0	0.8
Total	146.6	0.8
Murphy	132.5	0.7
Clark	130.1	0.7
Koch Industries	127.3	0.7
Agway	126.7	0.7
Energy Cooperatives	126.0	0.7
Tenneco	115.0	0.6
Crown Central	100.0	0.5
Little America	96.5	0.5
Farmland Industries	88.5	0.5
Earth Resources	87.0	0.5
Good Hope[4]	82.1	0.4
Independent Ref.	80.0	0.4
Tesoro	74.6	0.4
Diamond Shamrock	71.1	0.4
Pennzoil	65.2	0.4
Charter	65.0	0.4
U.S. Total & Puerto Rico	18,269.3	100.0
Top 4	5,302.1	29.0[5]
Top 8	8,957.2	49.0
Top 15	12,241.7	67.0
Top 20	13,616.5	74.5
Top 30	15,048.1	82.4
Top 40	15,858.1	86.8

TABLE 41

U.S. REFINING CAPACITY, 1980 (cont'd)

1/ Operating capacities of refiners in the U.S. and Puerto Rico as of January 1, 1980. Excludes Virgin Islands operations.

2/ Includes 37,000 b/d capacity at Gulf's Bayamon, Puerto Rico refinery.

3/ Includes 86,000 b/d at Sun's Yabucoa, Puerto Rico refinery.

4/ Name changed from Gasland to Good Hope.

5/ Individual groups may not add to total due to rounding.

Source: U.S. Department of Energy, Energy Information Administration, Energy Data Reports, Petroleum Refineries Annual, January 1, 1981.

TABLE 42

U.S. REFINING CAPACITY, 1979 1/
(000 Bbls/day)

Company	Capacity	% of Total
Exxon	1,577.0	8.8
Standard of California	1,367.5	7.7
Standard of Indiana	1,236.0	6.9
Shell	1,123.4	6.3
Texaco	1,051.0	5.9
Gulf	946.2 2/	5.3
Atlantic Richfield	834.2	4.7
Mobil	833.4	4.7
Marathon	588.0	3.3
Sun	567.5 3/	3.2
Union	490.0	2.7
Standard of Ohio	452.0	2.5
Ashland	442.5	2.5
Phillips	425.0	2.4
Conoco	372.1	2.1
Coastal	298.0	1.7
Cities Service	291.0	1.6
Getty	243.1	1.4
Champlin (Union Pacific)	239.2	1.3
Tosco	213.0	1.2
Kerr-McGee	189.0	1.1
American Petrofina	150.0	0.8
Murphy	132.5	0.7
Clark	130.1	0.7
Koch Industries	127.3	0.7
Agway	126.7	0.7
Energy Cooperatives	126.0	0.7
Tenneco	114.0	0.6
Crown Central	100.0	0.6
Commonwealth	95.0 4/	0.5
Little America	94.5	0.5
Farmland Industries	88.5	0.5
Charter	86.0	0.5
Total	82.5	0.5
Good Hope 5/	82.1	0.5
Tesoro	74.6	0.4
Earth Resources	74.1	0.4
Diamond Shamrock	72.8	0.4
Husky	65.3	0.4
Pennzoil	65.2	0.4
U.S. Total & Puerto Rico	17,832.4	100.0
Top 4	5,303.9 6/	29.7 6/
Top 8	8,968.7	50.3
Top 15	12,305.8	69.0
Top 20	13,590.1	76.2
Top 30	14,880.7	83.4
Top 40	15,666.2	87.9

TABLE 42

U.S. REFINING CAPACITY, 1979 (cont'd)

1/ Operating capacities of refiners in the U.S. and Puerto Rico as of January 1, 1980. Excludes Virgin Islands operations.

2/ Includes 34,000 b/d capacity at Gulf's Bayamon, Puerto Rico refinery.

3/ Includes 83,000 b/d at Sun's Yabucoa, Puerto Rico refinery.

4/ Represents operating capacity of Commonwealth's Penuelas, Puerto Rico refinery.

5/ Name changed from Gasland to Good Hope.

6/ Individual groups may not add to total due to rounding.

Source: U.S. Department of Energy, Energy Information Administration, Energy Data Reports, Petroleum Refineries Annual, January 1, 1980.

TABLE 43

U.S. REFINING CAPACITY, 1975[1/]
(000 Bbls/day)

Company	Refining Capacity	Percent of Total Capacity
Exxon	1,243.0	8.2
Shell	1,135.4	7.5
Standard of Indiana	1,117.0	7.4
Standard of California	1,024.0	6.8
Texaco	976.0	6.5
Gulf	904.2[2/]	6.0
Mobil	896.0	5.9
Atlantic Richfield	785.0	5.2
Sun	552.3[3/]	3.7
Union	489.0	3.2
Standard of Ohio	431.0	2.9
Phillips	396.0	2.6
Continental	388.5	2.6
Ashland	362.9	2.4
Marathon	324.0	2.1
Cities Service	268.0	1.8
Getty	218.7	1.4
Coastal States Gas	213.0	1.4
American Petrofina	200.0	1.3
Kerr-McGee	192.0	1.3
Total U.S. & Puerto Rico	15,114.6	100.0
Top 4	4,519.4	29.9[4/]
Top 8	8,080.6	53.5
Top 15	11,024.3	72.9
Top 20	12,116.1	80.2

[1/] Operating capacities of refiners in the U.S. and Puerto Rico as of January 1, 1976. Excludes Virgin Island operations.
[2/] Includes 37,800 b/d from Gulf's Bayomon refinery.
[3/] Includes 68,300 b/d from Sun's Yabucoa refinery.
[4/] Individual percentages may not add to totals because of rounding.

Source: U.S. Bureau of Mines, Mineral Industry Surveys, from National Petroleum Refiners' Association, "U.S. Refining Capacity," July 27, 1976.

TABLE 44

U.S. REFINING CAPACITY, 1970[1] (r)
(000 Bbls/day)

Company	Refining Capacity	Percent of Total Capacity
Standard of New Jersey	1,087.0	8.5
Standard of Indiana	1,040.4	8.1
Texaco	1,029.5	8.0
Shell	1,011.5	7.9
Standard of Calif.	969.0	7.6
Mobil	794.9	6.2
Gulf[2]	751.6	5.9
Atlantic Richfield	681.2	5.3
Sun	455.0	3.6
Union	444.0	3.5
Standard of Ohio	439.0	3.4
Phillips	398.0	3.1
Ashland	318.3	2.5
Continental	299.0	2.3
Cities Service	281.0	2.2
Getty	207.0	1.6
Marathon	205.0	1.6
Coastal States Gas	135.0	1.1
Amerada Hess	125.0	1.0
Union Pacific	122.5	1.0
U.S. Total	12,811.0	100.0
Top 4	4,168.4	32.5[3]
Top 8	7,365.1	57.5
Top 15	9,999.4	78.1
Top 20	10,793.9	84.3

[1] Operating capacities of refiners in the U.S. & Puerto Rico as of January 1, 1971. Excludes Virgin Island operations.

[2] Includes 37,800 b/d from Gulf's Bayomon refinery.

[3] Individual percentages may not add to totals due to rounding.

Source: U.S. Bureau of Mines Mineral Industry Surveys, from National Petroleum Refiners' Association, "U.S. Refining Capacity," September 17, 1971.

(r) Revised September 1980.

TABLE 45

U.S. REFINING CAPACITY, 1965[1/] (r)

(000 Bbls/day)

Company	Refining Capacity	Percent of Total Capacity
Std. of New Jersey	846.0	8.2
Texaco	790.0	7.7
Std. of Indiana	754.2	7.3
Std. of California	745.5	7.2
Shell	720.0	7.0
Mobil	693.0	6.7
Gulf[2/]	615.2	6.0
Sinclair	442.0	4.3
Atlantic Richfield	404.0	3.9
Union	381.8	3.7
Phillips	289.0	2.8
Cities Service	288.0	2.8
Continental	267.5	2.6
Tidewater	260.0	2.5
Sun	246.0	2.4
Ashland	195.5	1.9
Sunray DX	182.0	1.8
Std. of Ohio	167.0	1.6
Marathon	163.1	1.6
Commonwealth	115.0	1.1
U.S. & Puerto Rico	10,319.2	100.0
Top 4	3,135.7	30.4[3/]
Top 8	5,605.9	54.3
Top 15	7,742.2	75.0
Top 20	8,564.8	83.0

1/ Operating capacities of refiners in the U.S. & Puerto Rico as of January 1, 1966. Excludes Virgin Island operations.

2/ Includes 33,000 b/d from Gulf's Bayomon refinery.

3/ Individual percentages may not add to total due to rounding.

Source: U.S. Bureau of Mines Mineral Industry Surveys, from National Petroleum Refiners' Association, "U.S. Refining Capacity," July 16, 1966.

(r) Revised September 1980.

TABLE 46

U.S. REFINING CAPACITY, 1960[1]

(000 Bbls/day)

Company	Refining Capacity	Percent of Total Capacity
Standard of New Jersey	961.7	10.0
Texaco	724.0	7.5
Socony-Mobil	716.7	7.4
Standard of Indiana	675.4	7.0
Standard of California	647.5	6.7
Shell	594.0	6.2
Gulf	500.6	5.2
Sinclair	473.0	4.9
Cities Service	293.0	3.0
Phillips	274.3	2.8
Sun	255.0	2.6
Tidewater	253.5	2.6
Continental	216.0	2.2
Atlantic	210.0	2.2
Pure	187.0	1.9
Union	181.0	1.9
Sunray Mid-Continent	171.0	1.8
Standard of Ohio	170.5	1.8
Ashland	168.5	1.7
Richfield	165.0	1.7
U.S. Total	9,629.7	100.0
Top 4	3,077.8	32.0[2]
Top 8	5,292.9	55.0
Top 15	6,981.7	72.5
Top 20	7,837.7	81.4

[1] Operating capacities of refiners in the U.S. only as of January 1, 1961.

[2] Individual percentages may not add to totals due to rounding.

Source: U.S. Bureau of Mines *Mineral Industry Surveys*, from National Petroleum Refiners' Asscciation, "U.S. Refining Capacity," October 19, 1961.

TABLE 47

U.S. REFINING CAPACITY, 1950 1/(r)
(000 Bbls/day)

Company	Refining Capacity	Percent of U.S. Total
Standard of New Jersey	769.5	11.5
Socony-Vacuum	542.5	8.1
Texaco	510.0	7.6
Standard of Indiana	500.5	7.5
Gulf	442.5	6.6
Shell	382.0	5.7
Standard of California	376.1	5.6
Sinclair	360.0	5.4
Cities Service	215.0	3.2
Sun	200.0	3.0
Tidewater	192.5	2.9
Phillips	182.5	2.7
Atlantic	167.0	2.5
Union of California	153.4	2.3
Standard of Ohio	116.5	1.7
Pure	113.3	1.7
Ashland	105.7	1.6
Richfield	100.0	1.5
Continental	92.7	1.4
Mid-Continent Petroleum	47.0	0.7
Total U.S.	6,701.8	100.0
Top 4	2,322.5	34.7 2/
Top 8	3,883.1	57.9
Top 15	5,110.0	76.2
Top 20	5,568.7	83.1

1/ Operating capacities of refiners in the U.S. only, as of January 1, 1951.

2/ Individual percentages may not add to totals due to rounding.

(r) Revised September 1980.

Source: U.S. Bureau of Mines, Information Circular 7613, "Petroleum Refiners in the United States, January 1, 1951," and National Petroleum Refiners' Association, "Copy of a Chart Prepared by the Petroleum Administration for Defense, June 11, 1951," as shown in Barbara Loveless, "Entry and Exit in U.S. Petroleum Refining, 1948-1978" (forthcoming research paper), API.

I.B.2. U.S. REFINERY RUNS: 1955, 1960, 1965, 1970, 1975, 1979 and 1980

TABLE 48

U.S. REFINERY CRUDE RUNS, 1980[1]
(000 b/d)

Company	Runs[2]	% of Total
Exxon	1,246.0	9.2
Standard of California	1,181.0	8.8
Shell	902.0	6.7
Texaco	902.0	6.7
Standard of Indiana	882.0	6.5
Gulf	749.0	5.6
Mobil	734.0	5.4
Atlantic Richfield	727.4	5.4
Sun	449.9	3.3
Marathon	414.7	3.1
Standard of Ohio	401.0	3.0
Union	380.9	2.8
Ashland	363.4	2.7
Conoco	284.0	2.1
Phillips	262.0	1.9
Getty	251.0	1.9
Cities Service	237.7	1.8
Coastal	196.8	1.5
Champlin (Union Pacific)	194.7	1.4
Tosco	155.4	1.2
American Petrofina	133.8	1.0
Kerr-McGee	112.7	0.8
Total	97.7	0.7
Clark	97.5	0.7
Tenneco	91.3	0.7
Murphy	91.0	0.7
Crown Central	89.0	0.7
Commonwealth	61.1	0.5
Husky	60.2	0.4
Diamond Shamrock	57.1	0.4
U.S. & Puerto Rico Total	13,483.0[3]	100.0
Top 4	4,231.0	31.4[4]
Top 8	7,323.4	54.3
Top 15	9,879.3	73.3
Top 20	10,914.9	81.0
Top 30	11,806.4	87.6

---

[1] Includes Puerto Rican refineries owned by Gulf, Sun and Commonwealth. Does not include Amerada Hess' Virgin Island refineries.

TABLE 48

U.S. REFINERY RUNS, 1980

2/ These figures should be considered approximations because companies vary in how they report input to refineries. Furthermore, since some firms include both crude run in their refineries for others and crude run for the company's account by others, the market shares could be overstated.

Total U.S. "runs" refers to the number of barrels of crude oil processed through distillation units.

3/ This total represents the U.S. total from DOE plus the Puerto Rican runs of Sun, Gulf, and Commonwealth refineries.

4/ Individual percentages may not add to totals due to rounding.

Source: Company annual reports and 10-K's; telephone conversations with company personnel; Department of Energy (U.S. Total).

TABLE 49

U.S. REFINERY CRUDE RUNS, 1979 1/
(000 b/d)

Company	Runs2/	% of Total
Exxon	1,320.0	9.0
Standard of California	1,118.0	7.6
Standard of Indiana	1,031.0	7.0
Shell	1,004.0	6.9
Texaco	985.03/	6.7
Gulf	897.6	6.1
Atlantic Richfield	823.2	5.6
Mobil	797.0	5.4
Sun	529.6	3.6
Marathon	471.84/	3.2
Union	446.7	3.0
Standard of Ohio	429.0	2.9
Ashland	367.7	2.5
Conoco	337.0	2.3
Phillips	287.0	2.0
Cities Service	259.6	1.8
Getty	241.3	1.6
Champlin (Union Pacific)	218.1	1.5
Coastal	206.0	1.4
Tosco	174.5	1.2
American Petrofina	129.2	0.9
Kerr-McGee	123.2	0.8
Murphy	110.9	0.8
Crown Central	104.0	0.7
Clark	100.5	0.7
Tenneco	92.2	0.6
Total	87.2	0.6
Commonwealth	76.3	0.5
Vickers (Esmark)	64.2	0.4
Husky	63.1	0.4
U.S. & Puerto Rico Total	14,648.05/	100.0
Top 4	4,473.0	30.56/
Top 8	7,975.8	54.4
Top 15	10,844.6	74.0
Top 20	11,944.1	81.5
Top 30	12,894.9	88.0

1/ Includes Puerto Rican refineries owned by Gulf, Sun and Commonwealth. Does not include Amerada Hess' Virgin Island refineries.

TABLE 49

U.S. REFINERY RUNS, 1979

2/ These figures should be considered approximations because of the varying reporting practices among the firms reported here. Furthermore, since some firms include both crude run in their refineries for others and crude run for the company's account by others, the market shares could be overstated.

"Runs" refers to the number of barrels of crude oil and natural gas liquids processed through the company's distillation units.

3/ Includes interest in non-subsidiary domestic companies.

4/ Includes natural gas liquids.

5/ This total represents the U.S. total from DOE plus the Puerto Rican runs of Sun, Gulf, and Commonwealth refineries.

6/ Individual percentages may not add to totals due to rounding.

Source: 1980 company annual reports and Form 10-K; telephone conversations with company personnel; Department of Energy (U.S. Total).

TABLE 50

U.S. REFINERY RUNS, 1975[1/]

(000 b/d)

Company	Runs[2/]	Percent of U.S. Total
Exxon	1,182.0	9.5
Shell	977.0	7.9
Standard of Indiana	975.0	7.8
Texaco	957.0	7.7
Standard of California	928.0	7.5
Mobil	752.0	6.0
Gulf	749.6	6.0
Atlantic Richfield	653.5	5.3
Phillips	501.0	4.0
Union	456.5	3.7
Sun	440.8	3.5
Standard of Ohio	364.4	2.9
Ashland	330.9	2.7
Continental	323.9	2.6
Marathon	286.1	2.3
Cities Service	249.5	2.0
Getty[3/]	216.5	1.7
American Petrofina	162.9	1.3
Kerr-McGee	153.0	1.2
Union Pacific	144.0	1.2
Total U.S.	12,442.0	100.0
Top 4	4,091.0	32.9[4/]
Top 8	7,174.1	57.7
Top 15	9,877.7	79.4
Top 20	10,803.6	86.8

1/ Because of limited data, refineries in Puerto Rico and the Virgin Islands are excluded.

2/ The figures reported here should be considered approximations because of varying reporting practices among the firms. Furthermore, since some firms include both crude oil run in their refineries for others and crude run by others for the company's account, the market shares could be overstated.

3/ Includes all crude run by Skelly Oil Co.

4/ Individual percentages may not add to totals because of rounding.

Source: 1975 Company Annual Reports and Statistical Supplements; National Petroleum News, Mid-May Issue, 1976; U. S. Bureau of Mines (U. S. Total).

TABLE 51

U.S. REFINERY RUNS, 1970[1]

(000 b/d)

Company	Runs[2]	Percent of U.S. Total
Standard of New Jersey	989.0	9.1
Texaco	948.0	8.7
Standard of Indiana	895.0	8.2
Shell	887.0	8.2
Mobil	818.0	7.5
Standard of California	709.5	6.5
Gulf	702.3	6.5
Atlantic Richfield	678.4	6.2
Phillips	526.0	4.8
Sun	424.1	3.9
Union	385.0	3.5
Standard of Ohio	376.9	3.5
Ashland	288.8	2.7
Continental	288.0	2.6
Cities Service	278.0	2.6
Getty[3]	194.0	1.8
Marathon	186.6	1.7
Union Pacific	115.6	1.1
Amerada Hess	112.0	1.0
American Petrofina	98.7	0.9
Total U.S.	10,870.0	100.0
Top 4	3,719.0	34.2[4]
Top 8	6,627.2	61.0
Top 15	9,194.0	84.6
Top 20	9,900.9	91.1

[1] Because of limited data, refineries in Puerto Rico and the Virgin Islands are excluded.

[2] The figures reported here should be considered approximations because of varying reporting practices among the firms. Furthermore, since some firms include both crude oil run in their refineries for others and crude run by others for the company's account, the market shares could be overstated.

[3] Includes all crude run by Skelly Oil Company.

[4] Individual percentages may not add to totals because of rounding.

Source: Company Annual Reports and Statistical Supplements;
National Petroleum News, Mid-May Issue, 1971;
Petroleum Engineer International, Energy Management Report, May 1971;
U.S. Department of the Interior (U.S. Total).

TABLE 52

U.S. REFINERY RUNS, 1965[1]

(000 b/d)

Company	Runs[2]	Percent of U.S. Total
Standard of New Jersey	805.0	8.3
Texaco	757.4	7.8
Standard of Indiana	756.5	7.8
Shell	700.0	7.2
Mobil	672.0	6.9
Standard of California	650.8	6.7
Gulf	633.5	6.5
Sinclair	420.6	4.3
Union	348.7	3.6
Cities Service	277.0	2.8
Phillips	249.0	2.6
Continental	235.6	2.4
Sun	228.0	2.3
Atlantic Refining[3]	210.3	2.2
Tidewater[4]	202.0	2.1
Ashland	166.3	1.7
Standard of Ohio	163.0	1.7
Sunray DX[5]	160.6	1.6
Richfield[3]	156.3	1.6
Marathon	139.1	1.4
U. S. Total	9,749.7	100.0
Top 4	3,018.9	31.0[6]
Top 8	5,395.8	55.3
Top 15	7,146.4	73.3
Top 20	7,931.7	81.4

1/ Because of limited data, refiners in Puerto Rico and the Virgin Islands are excluded.

2/ The figures reported here should be considered approximations because of varying reporting practices among the firms. Furthermore, since some firms include both crude oil run in their refineries for others and crude run by others for the company's account, the market shares could be overstated.

3/ Atlantic and Richfield merged in 1966.

4/ Tidewater merged with Getty in 1967.

5/ Sunray DX merged with Sun in 1968.

6/ Individual percentages may not add to totals because of rounding.

Source: Company Annual Reports and Statistical Supplements;
National Petroleum News, Mid-May Issue, 1966;
Petroleum Management, May 1966;
U. S. Department of the Interior (U.S. Total).

TABLE 53

U.S. REFINERY RUNS, 1960[1]
(000 b/d)

Company	Runs[2]	Percent of U.S. Total
Standard of New Jersey	815.0	10.[illegible]
Texaco	675.5	8.3
Standard of Indiana	636.3	7.8
Mobil	572.0	7.0
Standard of California	519.9	6.4
Shell	501.0	6.2
Gulf	479.0	5.9
Sinclair	419.0	5.2
Cities Service	267.0	3.3
Phillips	217.0	2.7
Tidewater	205.0	2.5
Atlantic Refining	191.8	2.4
Continental	181.9	2.2
Pure[3]	180.3	2.2
Union	167.4	2.1
Sun	167.0	2.1
Richfield	148.3	1.8
Sunray Mid-Continent	148.1	1.8
Ashland	146.0	1.8
Standard of Ohio	137.3	1.7
U. S. Total	8,127.5	100.0
Top 4	2,698.8	33.2[4]
Top 8	4,617.7	56.8
Top 15	6,028.1	74.2
Top 20	6,774.8	83.4

[1] Because of limited data, refiners in Puerto Rico and the Virgin Islands are excluded.

[2] The figures reported here should be considered approximations because of varying reporting practices among the firms. Furthermore, since some firms include both crude oil run in their refineries for others and crude run by others for the company's account, the market shares could be overstated.

[3] Pure merged with Union in 1965.

[4] Individual percentages may not add to totals because of rounding.

Source: Company Annual Reports and Statistical Supplements; National Petroleum News, Mid-May Issue, 1961; U. S. Department of the Interior (U.S. Total).

TABLE 54

U.S. REFINERY RUNS, 1955[1]

(000 b/d)

Company	Runs[2]	Percent of U.S. Total
Standard of New Jersey	784.5	10.5
Standard of Indiana	576.2	7.7
Texas Co.	574.0	7.7
Mobil	540.7	7.2
Gulf	506.0	6.8
Shell	462.7	6.2
Standard of California	452.2	6.0
Sinclair	417.0	5.6
Cities Service	284.2	3.8
Phillips	228.7	3.1
Sun	227.3	3.0
Atlantic Refining	196.2	2.6
Tidewater	167.2	2.2
Union	161.1	2.2
Pure	153.2	2.0
Continental	148.3	2.0
Standard of Ohio	129.4	1.7
Richfield	122.0	1.6
Ashland	110.4	1.5
Sunray Mid-Continent	99.4	1.3
U. S. Total	7,480.0	100.0
Top 4	2,475.4	33.1[3]
Top 8	4,313.3	57.7
Top 15	5,731.2	76.6
Top 20	6,340.7	84.8

[1] Because of limited data, refineries in Puerto Rico and the Virgin Islands are excluded.

[2] The figures reported here should be considered approximations because of varying reporting practices among the firms. Furthermore, since some firms include both crude oil run in their refineries for others and crude run by others for the company's account, the market shares could be overstated.

[3] Individual percentages may not add to totals because of rounding.

Source: Company Annual Reports and Statistical Supplements; National Petroleum News, Mid-May Issue, 1956; De Chazeau and Kahn, Integration and Competition in the Petroleum Industry, 1959, pp. 30-31.

I.C. CONCENTRATION IN PETROLEUM TRANSPORTATION

I.C.1. U.S. INTERSTATE OIL PIPELINE OWNERSHIP: 1951, 1962, 1972, 1975, 1979 and 1980

TABLE 55

TOP 40 U.S. INTERSTATE OIL PIPELINE OWNERS, 1980(p)
(AS MEASURED BY TOTAL TRUNK LINE BARREL MILES)
(000,000 barrel-miles)

Rank	Owner Company	Barrel Miles	Percent of Total
1	Exxon	288552.6[1]	8.2
2	Standard of Indiana	276809.2	7.9
3	Standard of Ohio	274257.4[1]	7.8
4	Gulf	242932.5	6.9
5	Texaco	235975.7	6.7
6	Atlantic Richfield	231930.0[1]	6.6
7	Mobil	207327.0[1]	5.9
8	Shell	165961.7	4.7
9	Cities Service	133655.6	3.8
10	Phillips	120246.6[1]	3.4
11	Union Oil California	98267.5[1]	2.8
12	Ashland	93813.7	2.7
13	Conoco	91973.4	2.6
14	Marathon	88801.8	2.5
15	Sun	80149.4	2.3
16	British Petroleum	70533.6	2.0
17	Williams	67906.0	1.9
18	Texas Eastern	65025.5	1.9
19	Standard of California	54482.6	1.6
20	MAPCO	37863.0	1.1
21	Penn Central	34478.0	1.0
22	Santa Fe	32071.0	0.9
23	Clark	29789.6	0.9
24	Southern Pacific	28942.0	0.8
25	Getty	21816.7	0.7
26	Northern Natural Gas	19988.0	0.6
27	Koch	14175.9	0.4
28	Diamond Shamrock	12145.0	0.4
29	Dome	11446.5	0.3
30	Petrofina	10875.9	0.3
31	Amerada Hess	10125.0	0.3
32	Shell Canada	10087.1	0.3
33	Dow	8716.5[1]	0.3
34	Kaneb	8625.0	0.3
35	Charter	7186.0	0.2
36	A. G. Pipeline	5364.0	0.2
37	National Coop. Ref.	5012.1	0.1
38	Union Pacific	4144.0	0.1
39	Burlington Northern	4009.9	0.1
40	Crown Central	3758.0	0.1
U.S. Total		3,512,699.0	100.0

TABLE 55

TOP 40 U.S. INTERSTATE OIL PIPELINE OWNERS, 1980 (cont'd)

Top 4	1,082,551.7	30.8 2/
Top 8	1,923,746.1	54.8
Top 15	2,630,654.1	74.9
Top 20	2,926,464.7	83.3
Top 30	3,143,353.5	89.5
Top 40	3,210,381.1	91.4

1/ These firms include Trans-Alaska pipeline throughput.

2/ Individual percentages may not add to totals due to rounding.

(p) Preliminary.

Source: 1980 Federal Energy Regulatory Commission Form P (required annual report of interstate pipelines).

TABLE 56

TOP 40 U.S. INTERSTATE OIL PIPELINE OWNERS, 1979
(AS MEASURED BY TOTAL TRUNK LINE BARREL MILES)
(000,000 barrel-miles)

Rank	Owner Company	Barrel Miles	Percent of Total
1	Standard of Indiana	298514.4	8.2
2	Exxon	282676.7[1]	7.8
3	Standard of Ohio	267516.6[1]	7.4
4	Texaco	258168.7	7.1
5	Gulf	245686.8	6.8
6	Atlantic Richfield	216899.3[1]	6.0
7	Mobil	208141.7[1]	5.7
8	Shell	188687.6	5.2
9	Cities Service	136720.0	3.8
10	Phillips	133174.1[1]	3.7
11	Union Oil California	110247.6[1]	3.0
12	Marathon	105837.1	2.9
13	Sun	105070.9	2.9
14	Conoco	96727.2	2.7
15	Ashland	93256.5	2.6
16	Williams	75876.5	2.1
17	Penn Central	68908.0	1.9
18	Texas Eastern	68410.4	1.9
19	Standard of California	57943.9	1.6
20	MAPCO	45620.0	1.3
21	Clark	36911.5	1.0
22	Southern Pacific	29205.0	0.8
23	Santa Fe	23213.0	0.6
24	Northern Natural Gas	21095.0	0.6
25	Getty	17517.1	0.5
26	Diamond Shamrock	12741.6	0.4
27	Reserve Oil and Gas	12715.6	0.4
28	Koch	11538.1	0.3
29	Petrofina	10302.8	0.3
30	Shell Canada	9999.8	0.3
31	Kaneb	9647.0	0.3
32	Amerada Hess	9491.0[1]	0.3
33	Dome	9147.9	0.3
34	Charter	8205.0	0.2
35	Dow Chemical	7688.9	0.2
36	National Coop. Ref.	6551.5	0.2
37	Kerr-McGee	5225.2	0.2
38	United Refining	4512.0	0.1
39	A.G. Pipeline	4339.0	0.1
40	Farmland	4171.8	0.1
U.S. Total		3,634,407.0	100.0

TABLE 56

TOP 40 U.S. INTERSTATE OIL PIPELINE OWNERS, 1979 (cont'd)

Top 4	1,106,876.4	30.5[2]
Top 8	1,966,291.8	54.6
Top 15	2,747,325.2	75.6
Top 20	3,064,084.0	84.3
Top 30	3,249,324.5	89.4
Top 40	3,318,303.8	91.3

1/ These firms include Trans-Alaska pipeline throughput.

2/ Individual percentages may not add to totals due to rounding.

(p) Preliminary.

Source: 1979 Federal Energy Regulatory Commission Form P (required annual report of interstate pipelines).

TABLE 57

TOP TWENTY U.S. INTERSTATE OIL PIPELINE OWNERS OF 1975 (r)

(By Barrel Miles Handled In Trunk Lines)
(000,000 Barrel-Miles)

Company	Barrel Miles	Percent of Market Total
Standard of Indiana	279,846.1	10.0
Gulf	219,021.2	7.8
Texaco	211,674.7	7.5
Exxon	197,266.1	7.0
Mobil	181,443.8	6.5
Shell	176,202.3	6.3
Atlantic Richfield	123,344.6	4.4
Standard of Ohio	121,853.3	4.3
Cities Service	117,081.5	4.2
Phillips	106,701.6	3.8
Union	91,629.3	3.3
Continental	88,927.0	3.2
Marathon	86,559.9	3.1
Sun	82,179.4	2.9
Texas Eastern Transmission	65,531.1	2.3
Ashland	63,144.8	2.3
Williams Brothers	61,629.0	2.2
Standard of California	56,590.0	2.0
MAPCO	41,903.0	1.5
Penn Central	41,741.0	1.5
Market Total	2,804,866.0	100.0
Top 4	907,808.1	32.4[1/]
Top 8	1,510,652.1	53.9
Top 15	2,149,261.9	76.6
Top 20	2,415,269.7	85.0

[1/] Individual percentages may not add to totals because of rounding.

(r) Revised September 1981.

Sources: Interstate Commerce Commission, "Transport Statistics in the United States, Part 6, Pipelines," December 31, 1975 and Annual Report Form P.

TABLE 58

TOP TWENTY U.S. INTERSTATE OIL PIPELINE OWNERS OF 1972

(By Barrel Miles Handled in Trunk Lines)
(000,000 Barrel-Miles)

Company	Barrel Miles	Percent of Market Total
Standard of Indiana	270,820.7	10.1
Gulf	216,525.2	8.0
Standard of New Jersey	210,275.3	7.8
Texaco	209,857.5	7.8
Mobil	181,108.2	6.7
Shell	168,146.0	6.2
Atlantic Richfield	125,035.0	4.6
Standard of Ohio	116,257.5	4.3
Cities Service	115,167.9	4.3
Phillips	110,117.0	4.1
Continental	85,399.0	3.2
Union	83,226.8	3.1
Sun	76,286.8	2.8
Marathon	64,692.3	2.4
Standard of California	60,750.5	2.3
Williams Brothers	58,919.0	2.2
Texas Eastern Transmission	55,275.0	2.1
Ashland	50,012.7	1.9
Pennsylvania Company	42,056.0	1.6
Mapco	31,727.0	1.2
Market Total	2,692,651.0	100.0
Top 4	907,478.7	33.7[1]
Top 8	1,498,025.4	55.6
Top 15	2,093,665.7	77.8
Top 20	2,331,655.4	86.6

[1] Individual percentages may not add to totals because of rounding.

Sources: Interstate Commerce Commission, Moody's Industrial Manual; from Barbara M. Loveless, "National Concentration Measures in the Interstate Oil Pipeline Industry," Research Study #001, June 10, 1976. (API)

TABLE 59

TOP TWENTY U.S. INTERSTATE OIL PIPELINE OWNERS OF 1962

(By Barrel Miles Handled In Trunk Lines)
(000,000 Barrel-Miles)

Company	Barrel Miles	Percent of Market Total
Standard of Indiana	150,620.9	11.2
Standard of New Jersey	122,416.3	9.1
Texaco	111,756.3	8.3
Sinclair	109,528.7	8.1
Shell	97,448.6	7.2
Socony-Mobil	96,812.6	7.2
Gulf	84,207.3	6.3
Phillips	59,500.7	4.4
Pure	49,820.3	3.7
Cities Service	42,236.4	3.1
Sun	39,410.3	2.9
Continental	37,175.3	2.8
Buckeye	36,560.0	2.7
Marathon	35,115.5	2.6
Standard of Ohio	34,763.2	2.6
Standard of California	34,656.7	2.6
Texas Eastern	29,443.0	2.2
Atlantic Refining	20,952.0	1.6
Sunray	13,251.0	1.0
Southern Pacific	8,570.0	0.6
Market Total	1,345,270.0	100.0
Top 4	494,322.2	36.7[1]
Top 8	832,291.4	61.9
Top 15	1,107,372.4	82.3
Top 20	1,214,245.1	90.3

[1] Individual percentages may not add to totals because of rounding.

Sources: Interstate Commerce Commission, Moody's Industrial Manual; from Barbara M. Loveless, "National Concentration Measures in the Interstate Oil Pipeline Industry," Research Study #001, June 10, 1976. (API)

TABLE 60

TOP TWENTY U.S. INTERSTATE OIL PIPELINE OWNERS OF 1951

(By Barrel Miles Handled In Trunk Lines)
(000,000 Barrel-Miles)

Company	Barrel Miles	Percent of Market Total
Standard of Indiana	126,618.9	15.5
Standard of New Jersey	83,523.7	10.2
Texaco	81,122.1	9.9
Socony Vaccuum	68,258.1	8.4
Shell	68,121.5	8.3
Sinclair	65,142.8	8.0
Gulf	57,733.0	7.1
Standard of Ohio	30,277.8	3.7
Sun	28,160.6	3.4
Cities Service	25,836.8	3.2
Phillips	24,321.3	3.0
Ohio Oil Co.	24,239.0	3.0
Atlantic Refining	23,605.0	2.9
Buckeye	20,214.0	2.5
Humble[1]	16,934.5	2.1
Pure	13,567.1	1.7
Continental	11,377.0	1.4
Mid Continent	6,771.9	0.8
Standard of Kentucky	6,267.0	0.8
Skelly	5,079.0	0.6
Market Total	816,914.0	100.0
Top 4	359,522.7	44.0[2]
Top 8	580,797.9	71.1
Top 15	744,109.1	91.1
Top 20	787,171.2	96.4

[1] After adjustment for 72.51% Standard Oil of New Jersey interest.

[2] Individual percentages may not add to totals because of rounding.

Sources: Interstate Commerce Commission, Moody's Industrial Manual; from Barbara Loveless, "National Concentration Measures in the Interstate Oil Pipeline Industry," Research Paper #001, June 10, 1976. (API)

I.D. CONCENTRATION IN PETROLEUM MARKETING

I.D.1. U.S. REFINED PRODUCT SALES: 1965, 1970, 1975, 1979 and 1980

TABLE 61

U.S. REFINED PRODUCT SALES, 1980

(000 b/d)

Company	Sales	% of Total
Exxon	1,503.0[1]	8.8
Standard of California	1,255.0[2]	7.4
Texaco	972.0[3]	5.7
Standard of Indiana	957.2[4]	5.6
Shell	922.0	5.4
Mobil	797.0	4.7
Gulf	736.9	4.3
Atlantic Richfield	702.5[5]	4.1
Sun	618.1[6]	3.6
Ashland	497.7	2.9
Marathon	463.7	2.7
Phillips	460.0	2.7
Union	421.7[7]	2.5
Standard of Ohio	413.6[8]	2.4
Getty	351.3	2.1
Conoco	337.7[9]	2.0
Cities Service	270.9	1.6
Coastal States	220.2	1.3
Champlin (Union Pacific)	174.0	1.0
Kerr-McGee	167.6	1.0
Tosco	158.4	0.9
Tesoro	137.8	0.8
American Petrofina	137.6	0.8
Tenneco	125.9	0.7
Total	108.4	0.6
Clark	107.4	0.6
Murphy	92.4	0.5
Diamond Shamrock	84.4	0.5
Commonwealth	83.2	0.5
Pennzoil	55.9	0.3
U.S. Total	17,006.0	100.0
Top 4	4,687.2	27.6[10]
Top 8	7,845.6	46.1
Top 15	11,071.7	65.1
Top 20	12,242.1	72.0
Top 30	13,333.5	78.4

TABLE 61

U.S. REFINED PRODUCT SALES, 1980

1/ Includes [illegible]3,000 barrels/day of gasolines and napthas.

2/ Includes 449,000 barrels/day of gasoline.

3/ Includes 435,000 barrels/day of gasoline.

4/ Includes 504,345 barrels/day of gasoline.

5/ Includes 329,200 barrels/day of gasoline and naptha.

6/ Includes 289,071 barrels/day of gasoline.

7/ Includes 252,900 barrels/day of gasoline.

8/ Includes 259,717 barrels/day of automotive gasoline.

9/ Includes 269,988 barrels/day of gasoline.

10/ Individual percentages may not add to total due to rounding.

Source: Company annual reports and 10-K reports; Dept of Energy (U.S. Total).

TABLE 62

U.S. REFINED PRODUCT SALES, 1979(r)
(000 b/d)

Company	Sales	% of Total
Exxon	1,667.0	9.0
Standard of California	1,286.0[1]	6.9
Texaco	1,125.0	6.1
Standard of Indiana	1,096.0	5.9
Shell	1,023.0[2]	5.5
Gulf	913.5	4.9
Mobil	865.0[3]	4.7
Atlantic Richfield	773.0	4.2
Sun	678.2[4]	3.7
Marathon	552.4	3.0
Ashland	530.4	2.9
Union	463.1[5]	2.5
Phillips	458.0[6]	2.5
Standard of Ohio	430.1[7]	2.3
Conoco	394.0[8]	2.1
Getty	304.8[9]	1.6
Cities Service	292.0	1.6
Coastal States	238.3	1.3
Champlin (Union Pacific)	198.0	1.1
Kerr-McGee	181.2	1.0
Tosco	170.5	0.9
Tesoro	154.8	0.8
American Petrofina	144.4[10]	0.8
Tenneco	136.6	0.7
Murphy	110.7	0.6
Clark	102.6	0.6
Commonwealth	95.1	0.5
Total	91.4	0.5
Vickers (Esmark)	91.3	0.5
Diamond Shamrock	68.6	0.4
U.S. Total	18,513.0	100.0
Top 4	5,174.0	27.9[11]
Top 8	8,748.5	47.3
Top 15	12,254.7	66.2
Top 20	13,469.0	72.8
Top 30	14,635.1	79.1

TABLE 62

U.S. REFINED PRODUCT SALES, 1979(cont)

1/ Includes 450,000 barrels/day of gasoline.

2/ Includes 601,000 barrels/day of gasoline.

3/ Includes 534,000 barrels/day of automotive gasoline.

4/ Includes 318,613 barrels/day of automotive gasoline.

5/ Includes 339,190 barrels/day of gasoline.

6/ Includes 220,300 barrels/day of automotive gasoline.

7/ Includes 119,769 barrels/day of gasoline.

8/ Includes 268,000 barrels/day of automotive gasoline.

9/ Includes 269,988 barrels/day of gasoline.

10/ Includes 263,662 barrels/day of gasoline.

11/ Individual percentages may not add to total due to rounding.

(r) Revised September 1981.

Source: Company annual reports and Form 10-K reports; conversation with company personnel; Dept. of Energy (U.S. Total).

TABLE 63

U.S. REFINED PRODUCT SALES, 1975 (r)
(000 b/d)

Company	Sales	Percent of Total
Exxon	1,561.0	9.6
Texaco	1,311.0	8.0
Standard of Indiana	1,166.0	7.1
Standard of California	1,029.0	6.3
Shell	987.0	6.0
Gulf	836.4	5.1
Mobil	822.0	5.0
Atlantic Richfield	660.4	4.0
Phillips	555.0	3.4
Sun	552.1	3.4
Ashland	441.2	2.7
Union	434.7	2.7
Continental	379.0	2.3
Standard of Ohio	351.1	2.2
Marathon	307.2	1.9
Getty 1/	279.9	1.7
Cities Service	278.1	1.7
Kerr-McGee	229.3 2/	1.4
American Petrofina	179.1	1.1
Champlin (Union Pacific)	145.8	0.9
U.S. Total 3/	16,322.0	100.0
Top 4	5,067.0	31.0 4/
Top 8	8,372.8	51.3
Top 15	11,393.1	69.8
Top 20	12,505.3	76.6

1/ Includes all sales by Skelly Oil Co.
2/ Includes an insignificant amount of foreign sales.
3/ Total domestic demand for refined product.
4/ Individual percentages may not add to totals because of rounding.

(r) Revised September 1980.

Source: 1976 and 1979 company annual reports and Form 10-K's; National Petroleum News, Mid-June issue, 1977; U.S. Bureau of Mines (U.S. Total).

TABLE 64

U.S. REFINED PRODUCT SALES, 1970 (r)

(000 b/d)

Company	Sales	Percent of Total
Standard of New Jersey	1,753.0	11.9
Texaco	1,274.0	8.7
Shell	1,005.0	6.8
Standard of Indiana	962.7	6.6
Standard of California	934.8	6.4
Mobil	929.0	6.3
Gulf	799.6	5.4
Atlantic Richfield	762.9	5.2
Phillips	616.0	4.2
Sun	496.0	3.4
Union	426.6	2.9
Standard of Ohio	390.8	2.7
Continental	365.0	2.5
Ashland	344.3	2.3
Cities Service	286.9[1]	1.9
Getty [2]	224.0	1.5
Marathon	215.3	1.5
Champlin (Union Pacific)	122.8	0.8
American Petrofina	116.5	0.8
Kerr-McGee	101.2	0.7
U.S. Total[3]	14,697.0	100.0
Top 4	4,994.7	34.0[4]
Top 8	8,421.0	57.3
Top 15	11,346.6	77.2
Top 20	12,126.4	82.5

[1] Includes an insignificant amount of Canadian sales.
[2] Includes all sales by Skelly Oil Co.
[3] Total domestic demand for refined products.
[4] Individual percentages may not add to totals due to rounding.

(r) Revised September 1980.

Source: Company annual reports and statistical supplements; National Petroleum News, Mid-May issue, 1972; Petroleum Engineer International, Energy Management Report, May 1971; U.S. Bureau of Mines (U.S. Total).

TABLE 65

U.S. REFINED PRODUCT SALES, 1965
(000 b/d)

Company	Sales	Percent of National Market
Standard of New Jersey	1,361.0	11.8
Texaco	1,224.8[1]	10.6
Shell	846.0	7.3
Standard of Indiana	811.9	7.1
Standard of California	789.0	6.9
Mobil	760.0	6.6
Gulf	658.3	5.7
Phillips	462.0	4.0
Sinclair	443.4	3.9
Union	343.0	3.0
Cities Service	320.0	2.8
Continental	289.9	2.5
Sun	273.5[2]	2.4
Hess[3]	240.0	2.1
Atlantic Refining[4]	224.3	1.9
Tidewater[5]	217.0	1.9
Ashland	194.6	1.7
Sunray DX	175.9	1.5
Standard of Ohio	162.5	1.4
Marathon	147.8	1.3
Total U.S.[6]	11,513.0	100.0
Top 4	4,243.7	36.9[7]
Top 8	6,913.0	60.0
Top 15	9,047.1	78.6
Top 20	9,944.9	86.4

[1] Western Hemisphere.

[2] Includes an insignificant amount of Canadian sales.

[3] Hess merged with Amerada in 1969.

[4] Atlantic merged with Richfield in 1966.

[5] Tidewater merged with Getty in 1967.

[6] Total domestic demand for refined products.

[7] Individual percentages may not add to totals because of rounding.

Sources: Company Annual Reports and Statistical Supplements;
National Petroleum News, Mid-May Issue, 1966;
Petroleum Management, May 1966;
U.S. Bureau of Mines (U.S. Total).

I.D.2. U.S. MOTOR GASOLINE SALES: 1954, 1969, 1970, 1975, 1979 and 1980

TABLE 66

U.S. MOTOR GASOLINE SALES, 1980[1]
(000,000 gals.)

Company	Sales	% of Total
Shell	7,941.0	7.6
Exxon	7,874.8	7.5
Standard of Indiana	7,713.2	7.4
Mobil	6,243.1	6.0
Texaco	6,189.3	6.0
Standard of California	5,969.5	5.7
Gulf	5,594.0	5.4
Atlantic Richfield	4,038.8	3.9
Union	3,654.5	3.5
Phillips	2,965.3	2.8
Sun	2,879.6	2.8
Marathon	2,226.7	2.1
Conoco	1,786.0[2]	1.7
Ashland	1,648.0[3]	1.6
Getty	1,578.9[4]	1.5
Cities Service	1,448.3	1.4
Standard of Ohio	1,439.8[5]	1.4
Clark	1,147.3	1.1
Tosco	933.4	0.9
Total	915.2[6]	0.9
Tenneco	893.7	0.9
American Petrofina	817.2	0.8
Kerr-McGee	788.0[7]	0.8
British Petroleum	780.3	0.8
Amerada Hess	759.8	0.7
Murphy	665.4	0.6
Sigmor Dist.	564.3	0.5
Crown Central	507.2	0.5
Coastal	477.4[8]	0.5
Diamond Shamrock	417.4	0.4
U.S. Total	104,490.8	100.0
Top 4	29,772.1	28.5[9]
Top 8	51,563.7	49.3
Top 15	68,302.7	65.4
Top 20	74,186.7	71.0
Top 30	80,857.4	77.4

TABLE 66

U.S. MOTOR GASOLINE SALES, 1980(p)

1/ Sales data represent net taxable gasoline gallonage sold in the U.S. by all petroleum marketers, including non-retail sales by suppliers, cooperatives, etc. Lundberg Survey obtains data primarily from state tax collecting agencies, but also by direct inquiry.

2/ Includes sales under the brand names Douglas, Kayo and Onco.

3/ Includes sales under the brand name Northwestern.

4/ Includes sales under the brand name Skelly.

5/ Includes sales under the brand name Boron.

6/ Includes sales under the brand name Lion.

7/ Includes sales under the brand name Triangle.

8/ Includes sales under the brand name Derby.

9/ Individual percentages may not add to total due to rounding.

Source: Lundberg Survey, National Share of the Market, December 1980.

TABLE 67

U.S. MOTOR GASOLINE SALES, 1979(r)1/
(000,000 gals.)

Company	Sales	% of Total
Exxon	8,508.0	7.7
Standard of Indiana	8,266.1	7.5
Shell	8,083.5	7.3
Gulf	7,020.1	6.4
Texaco	6,657.3	6.0
Mobil	6,404.7	5.8
Standard of California	5,872.9	5.3
Atlantic Richfield	4,301.1	3.9
Union	3,880.0	3.5
Sun	3,334.2	3.0
Phillips	3,145.2	2.8
Marathon	2,440.1	2.2
Conoco	1,965.1 2/	1.8
Ashland	1,703.3	1.5
Getty	1,637.7 3/	1.5
Cities Service	1,581.4 4/	1.4
Standard of Ohio	1,458.0 5/	1.3
Clark	1,077.2	1.0
Tosco	1,018.3 6/	0.9
Total	910.8	0.8
Tenneco	893.7	0.8
Kerr-McGee	847.0 7/	0.8
American Petrofina	828.2	0.8
Amerada Hess	793.8	0.7
British Petroleum	767.9	0.7
Murphy	660.3	0.6
Crown Central	546.4	0.5
Sigmor Dist.	532.0	0.5
Coastal	523.5 8/	0.5
Champlin (Union Pacific)	425.8	0.4
U.S. Total	110,406.7	100.0
Top 4	31,877.7	28.9 9/
Top 8	55,113.7	49.9
Top 15	73,219.3	66.3
Top 20	79,265.0	71.8
Top 30	86,083.6	78.0

TABLE 67

U.S. MOTOR GASOLINE SALES, 1979

1/ Sales data represent net taxable gasoline gallonage sold in the U.S. by all petroleum marketers, including non-retail sales by suppliers, cooperatives, etc. Lundberg Survey obtains data primarily from state tax collecting agencies, but also by direct inquiry.

2/ Includes sales under the brand names Douglas, Kayo and Onco.

3/ Includes sales under the brand name Skelly. Even though Skelly merged 100% with Getty in 1977, still sells under Skelly name.

4/ Includes sales under the brand name Northwestern.

5/ Includes sales under the brand name Boron.

6/ Includes sales under the brand name Lion.

7/ Includes sales under the brand name Triangle.

8/ Includes sales under the brand name Derby.

9/ Individual percentages may not add to total due to rounding.

(r) Revised September 1981.
Source: Lundberg Survey, National Share of the Market, December 1979.

TABLE 68

MOTOR GASOLINE SALES, 1975 [1] (r)

(000,000 gals.)

Company	Sales	Percent of National Market
Texaco	8230	7.9
Exxon	7581	7.3
Standard of Indiana	7410	7.2
Shell	7276	7.0
Gulf	6534	6.3
Mobil	6244	6.0
Standard of California	4748	4.6
Atlantic Richfield	4106	4.0
Phillips	4061	3.9
Sun	3610	3.5
Union	3289	3.2
Continental[2]	2506	2.4
Standard of Ohio[3]	1969	1.9
Cities Service	1766	1.7
Ashland[4]	1702	1.6
Marathon	1608	1.6
Getty[5]	1446	1.4
Kerr McGee[6]	1135	1.1
American Petrofina	1097	1.1
Clark	1049	1.0
U.S. Total	103547	100.0
Top 4	30497	29.5[7]
Top 8	52129	50.3
Top 15	71032	68.6
Top 20	77367	74.7

[1] Sales data represent net taxable gasoline gallonage sold in the U.S. by all petroleum marketers, including nonretail sales by suppliers, cooperatives, etc. Lundberg Survey obtains data primarily from state tax-collecting agencies, but also by direct inquiry.

[2] Includes sales under the brand names Douglas, Kayo and Onco.

[3] Includes sales of subsidiaries BP Oil and Boron.

[4] Includes sales of subsidiary Northwestern Refining Company.

[5] Includes all sales by Skelly Oil Company.

[6] Includes sales under the brand name Triangle.

[7] Individual percentages may not add to totals because of rounding.

(r) Revised August 1977.

Source: Lundberg Survey, Inc., "National Share of the Market, Annual 1976."

TABLE 69

MOTOR GASOLINE SALES, 1970[1]

(000,000 gals.)

Company	Sales	Percent of National Market
Texaco	7,300	8.1
Shell	7,050	7.8
Standard of New Jersey	6,656	7.4
Standard of Indiana	6,557	7.3
Gulf	6,398	7.1
Mobil	5,921	6.6
Atlantic Richfield	4,979	5.5
Standard of California	4,161	4.6
Sun	3,721	4.1
Phillips	3,559	4.0
Union	2,950	3.3
Standard of Ohio[2]	2,569	2.9
Continental[3]	2,107	2.3
Cities Service	1,839	2.0
Marathon	1,552	1.7
Ashland[4]	1,283	1.4
Getty[5]	1,108	1.2
Tenneco	838	0.9
Kerr-McGee[6]	690	0.8
Murphy	677	0.8
U.S. Total	89,862	100.0
Top 4	27,563	30.7[7]
Top 8	49,022	54.6
Top 15	67,319	74.9
Top 20	71,915	80.0

[1] Sales data represent net taxable gasoline gallonage sold in the U.S. by all petroleum marketers, including nonretail sales by suppliers, cooperatives, etc. Lundberg Survey obtains data primarily from state tax-collecting agencies, but also by direct inquiry.

[2] Includes sales of subsidiaries BP Oil and Boron.

[3] Includes sales under the brand names of Douglas, Kayo and Onco.

[4] Includes sales of subsidiary Northwestern Refining Company.

[5] Includes all sales by Skelly Oil Company.

[6] Includes sales under the brand name Triangle.

[7] Individual percentages may not add to totals because of rounding.

Source: Lundberg Survey, Inc., copyright by Dan Lundberg, 1972. Reprinted in National Petroleum News, Mid-May Issue, 1972.

TABLE 70

MOTOR GASOLINE SALES, 1969[1]

(000,000 gals.)

Company	Sales	Percent of National Market
Texaco	7,146	8.3
Shell	7,023	8.2
Gulf	6,514	7.6
Standard of New Jersey	6,472	7.5
Standard of Indiana	6,417	7.5
Mobil	5,745	6.7
Atlantic Richfield	4,852	5.7
Standard of California	4,467	5.2
Sun	3,712	4.3
Phillips	3,386	3.9
Union	2,848	3.3
Continental[2]	1,917	2.2
Cities Service	1,685	2.0
Marathon	1,379	1.6
Standard of Ohio	1,320	1.5
British Petroleum[3]	1,246	1.5
Getty[4]	966	1.1
Ashland[5]	939	1.1
Tenneco	826	1.0
Kerr-McGee[6]	605	0.7
Total U.S.	85,756	100.0
Top 4	27,155	31.7[7]
Top 8	48,636	56.7
Top 15	64,883	75.7
Top 20	69,465	81.0

[1] Sales data represent net taxable gasoline gallonage sold in the U.S. by all petroleum marketers, including nonretail sales by suppliers, cooperatives, etc. Lundberg Survey obtains data primarily from state tax-collecting agencies, but also by direct inquiry.

[2] Includes sales under the brand names Douglas, Kayo, and Onco.

[3] Prior to 1970 Standard of Ohio did not own BP Oil Corporation or Boron (subsidiary of BP).

[4] Includes all sales by Skelly Oil Company.

[5] Does not include sales of Northwestern Refining Company (acquired by Ashland in 1970).

[6] Includes sales under the brand name Triangle.

[7] Individual percentages may not add to totals because of rounding.

Source: Lundberg Survey, Inc., copyright by Dan Lundberg, 1971. Reprinted in National Petroleum News, Mid-May Issue, 1971.

TABLE 71

MOTOR GASOLINE SALES, 1954 (r)
(000,000 gals.)

Company	Sales[1]	Estimated Percent of National Market
Texas Company	4,037	7.9
Standard of New Jersey	3,986	7.8
Socony-Mobil	3,986	7.9
Standard of Indiana	3,935	7.7
Gulf	3,475	6.8
Shell	3,373	6.6
Sinclair	2,555	5.0
Standard of California	2,248	4.4
Sun	1,893	3.6
Phillips	1,686	3.3
Cities Service	1,584	3.1
Tidewater[2]	1,226	2.4
Atlantic Refining[3]	1,124	2.2
Pure[4]	1,073	2.1
Union	919	1.8
Standard of Ohio	868	1.7
Continental[5]	817	1.6
Standard of Kentucky[6]	817	1.6
Richfield	767	1.5
Ashland	767	1.5
U.S. Total	51,107	100.0
Top 4	15,944	31.2[7]
Top 8	27,595	54.0
Top 15	37,100	72.6
Top 20	41,136	80.5

[1] These numbers are estimates.

[2] Tidewater merged with Skelly in 1967.

[3] Atlantic and Richfield merged in 1966.

[4] Union acquired Pure in 1965.

[5] Does not include sales under the brand name Douglas or Kayo (acquired in 1961 and 1959, respectively).

[6] Standard of California acquired Standard of Kentucky in 1961.

[7] Individual percentages may not add to totals due to rounding.

(r) Revised September 1980.

Source: DeChazeau and Kahn, Integration and Competition in the Petroleum Industry, 1959, pp. 30-31.

SECTION II:

CONCENTRATION IN THE U.S. PRODUCTION OF ENERGY

II.A. CONCENTRATION IN COAL AND URANIUM PRODUCTION AND RESERVE HOLDINGS

II.A.1. U.S. BITUMINOUS COAL AND LIGNITE PRODUCTION: 1955, 1960, 1965, 1970, 1975, 1979 and 1980

TABLE 72

U.S. BITUMINOUS COAL AND LIGNITE PRODUCTION, 1980(p)

(000 Tons)

Company1/	Production	% of Total
Peabody (Peabody Holding Co.) 2/	59,083	7.1
Consolidation (Conoco)	48,955	5.9
AMAX Coal 3/	40,547	4.9
Texas Utilities	27,591	3.3
Island Creek (Occidental)	20,017	2.4
Pittston	17,776	2.1
NERCO4/	16,900	2.0
Arch Minerals (Ashland)	15,818	1.9
U.S. Steel Corp	14,224	1.7
Central Ohio Coal (American Elec. Power Service Corp.)	14,052	1.7
Peter Kiewit 5/	13,450	1.6
North American Coal Corp.	12,670	1.5
Westmoreland Coal6/	12,657	1.5
Bethlehem Mines Corp.	11,707	1.4
Exxon	11,400	1.4
Old Ben (Std. of Ohio)	11,200	1.3
Atlantic Richfield	11,091	1.3
Kerr-McGee	10,676	1.3
Western Energy	10,448	1.3
Utah International (General Electric)	10,200	1.2
Pittsburg & Midway (Gulf)	9,685	1.2
Eastern Associated	8,732	1.0
MAPCO	7,391	0.9
Rochester & Pittsburg	7,359	0.9
Freeman-United (General Dynamics)	7,099	0.8
United Coal	6,564	0.8
Sunoco	6,560	0.8
Drummond Coal	6,255	0.7
Falcon Coal	5,554	0.7
C & K Coal (Gulf Resources)	5,259	0.6
Washington Irrigation & Devel. (Washington Water Power)	5,140	0.6
Knife River	4,789	0.6
Valley Camp	4,642	0.6
Armco/Nat. Resources	4,567	0.5
Emery Mining	4,566	0.5
Jones & Laughlin	4,248	0.5
Kemmerer Coal	4,200	0.5
Baukol Noonan	4,136	0.5
Ziegler Coal	4,042	0.5
Republic Steel	4,007	0.5
U.S. Total	835,400	100.0
Oil Company Production 7/	171,114	20.5
Top 4	176,176	21.1 8/
Top 8	246,687	29.5
Top 15	336,847	40.3
Top 20	390,462	46.7
Top 30	460,920	55.2
Top 40	505,257	60.5

TABLE 72

U.S. BITUMINOUS COAL AND LIGNITE PRODUCTION, 1980(p)

1/ Where applicable the names of each coal-operating group is followed in parentheses by its parent company.

2/ Consortium composed of Newmont Mining (27 1/2%); The Williams Companies (27 1/2%); Bechtel Corp. (15%); The Boeing Company (15%); The Fluor Corp. (10%), and the Equitable Life Assurance Socieity (5%).

3/ Company 20.6% owned by Std. of California.

4/ NERCO owns 50% of Decker Coal Co. (Montana) and Peter Kiewit and Sons own other 50%. Each reports separately.

5/ Black Butte Coal owned 50% by Rocky Mt. Energy and Peter Kiewit and Sons.

6/ The parent company of Westmoreland Resources is composed of Westmoreland Coal Co.; Penn-Virginia Corp.; Morrison-Knudsen Co.

7/ Oil companies involved in coal production are: Consolidation (Continental Oil); Pittsburg & Midway (Gulf Oil); Island Creek (Occidental); Old Ben (Std. of Ohio); Carter Mining (Exxon): Arch Minerals (Ashland); Tesoro Coal (Tesoro Petroleum); Valley Camp (Quaker State); Diamond Coal (Transco); Sunoco Energy Development (Sun Oil); Thunder Basin (Atlantic Richfield); Belva Coal (Reading & Bates); Webster County Coal (MAPCO); Youghiogheny & Ohio Coal (Panhandle Eastern); Coastal; Kerr-McGee; and Shell.

8/ Individual percentages may not add to total due to rounding.

(p) Preliminary.

Source: Keystone Coal Industry Bulletin, "U.S. Coal Production by Company, 1981," Dept. of Energy (U.S. Total)

TABLE 73

U.S. BITUMINOUS COAL AND LIGNITE PRODUCTION, 1979(r)

(000 Tons)

Company[1]	Production	% of Total
Peabody (Peabody Holding Co.) [2]	64,423	8.2
Consolidation (Conoco)	50,123	6.4
AMAX Coal [3]	34,559	4.4
Texas Utilities	25,156	3.2
Island Creek (Occidental)	19,942	2.6
NERCO[4]	16,380	2.1
U.S. Steel Corp	14,979	1.9
Pittston	14,667	1.9
Central Ohio Coal (American Elec. Power Service Corp.)	13,342	1.7
Peter Kiewit [5]	13,077	1.7
Arch Minerals (Ashland Coal)	12,600	1.6
Western Energy (Montana Power)	11,722 [6]	1.5
North American Coal Corp.	11,573	1.5
Bethlehem Mines Corp.	11,499	1.5
Old Ben (Std. of Ohio)	10,045	1.3
Pittsburg & Midway (Gulf Oil)	9,265	1.2
Exxon U.S.A.	8,700	1.1
Utah International (General Electric)	8,500	1.1
Eastern Associated	8,001	1.0
Westmoreland Coal [7]	7,611	1.0
Freeman-United (General Dynamics)	7,380	0.9
Atlantic Richfield	6,780	0.9
Rochester and Pittsburgh	6,399	0.8
MAPCO	6,378	0.8
United Coal	6,099	0.8
C&K Coal (Gulf Resources & Chem. Corp.)	5,912	0.8
Falcon Coal	5,800	0.7
Jones & Laughlin	5,323	0.7
Kerr-McGee	5,068	0.6
H.E. Drummond (The Drummond Co.)	5,000	0.6
Wash. Irrigation & Devel. (Wash. Water Power)	5,000	0.6
Westmoreland Resources	4,948	0.6
Knife River (Montana Dakota Utilities)	4,817 [6]	0.6
Valley Camp (Quaker State)	4,594	0.6
Ziegler Corp. (Houston Natural Gas)	4,442	0.6
Ashland Coal (Ashland Oil Co.) [8]	4,382	0.6
Kemmerer Coal	4,300	0.6
Baukol-Noonan	4,250	0.5
Armco Inc.	3,898	0.5
Sunoco Energy Development (Sun Oil)	3,831	0.5
U.S. Total	781,134	100.0
Oil Company Production [9]	149,999	19.2
Top 4	174,261	22.3[10]
Top 8	240,229	30.8
Top 15	324,087	41.5
Top 20	366,164	46.9
Top 30	426,303	54.6
Top 40	470,765	60.3

TABLE 73

U.S. BITUMINOUS COAL AND LIGNITE PRODUCTION, 1979(r)

1/ Where applicable the names of each coal-operating group is followed in parentheses by its parent company.

2/ Consortium composed of Newmont mining (27 1/2%); The Williams Companies (27 1/2%); Bechtel Corp. (15%); The Boeing Company (15%); The Fluor Corp. (10%), and the Equitable Life Assurance Socieity (5%).

3/ Company 20.6% owned by Std. of California.

4/ NERCO owns 50% of Decker Coal Co. (Montana) and Peter Kiewit and Sons own other 50%. Each reports separately.

5/ Black Butte Coal owned 50% by Rocky Mt. Energy and Peter Kiewit and Sons.

6/ Captive coal is coal which is used only by the parent company and little, if any, is sold on the open market.

7/ The parent company of Westmoreland Resources is composed of Westmoreland Coal Co.; Penn-Virginia Corp.; Morrison-Knudsen Co., and Kewanee Industries..

8/ Name changed from Addington Brothers to Ashland Coal Co. in 1978. Ashland Coal and Arch Minerals are both owned by Ashland Oil Company, Inc.

9/ Oil companies involved in coal production are: Consolidation (Continental Oil); Pittsburg & Midway (Gulf Oil); Island Creek (Occidental); Old Ben (Std. of Ohio); Carter Mining (Exxon): Arch Minerals (Ashland); Tesoro Coal (Tesoro Petroleum); Valley Camp (Quaker State); Diamond Coal (Transco); Sunoco Energy Development (Sun Oil); Thunder Basin (Atlantic Richfield); Belva Coal (Reading & Bates); Webster County Coal (MAPCO); Youghiogheny & Ohio Coal (Panhandle Eastern); Coastal; Kerr-McGee; and Shell.

10/ Individual percentages may not add to total due to rounding.

(r) Revised September 1981

Source: Keystone Coal Industry Bulletin, "U.S. Coal Production by Company, 1980."(U.S. Total)

TABLE 74

U.S. BITUMINOUS COAL AND LIGNITE PRODUCTION, 1975[1] (r)

(000 Tons)

Company	Production	Percent of Total U.S. Production
Peabody Coal Co., (Kennecott Copper)	73,051	11.3
Consolidation Coal (Continental Oil)	54,919	8.5
Amax Coal Co. (Amax, Inc.)[2]	21,840	3.4
Island Creek Coal Co. (Occidental Petroleum)	19,421	3.0
Pittston Co.	18,554	2.9
U.S. Steel Corp.	17,116	2.6
Arch Mineral Corp. (Ashland Oil - Hunt Enterprises)	13,468	2.1
Bethlehem Mines Corp. (Bethlehem Steel Co.)	13,355	2.1
Peter Kiewit Sons Mining Div. (Peter Kiewit & Sons Co.)	11,725	1.8
North American Coal Corp.	9,595	1.5
Old Ben (Standard of Ohio)	9,258	1.4
Massey Coal (St. Joe Minerals)	9,100	1.4
Central Ohio Coal Co. (American Electric Power Service Corp.)	8,265	1.3
Westmoreland Coal Co.	7,900	1.2
Eastern Associated Coal Co. (Eastern Gas and Fuel Assoc.)	7,840	1.2
Pittsburg & Midway Coal Mining Co. (Gulf Oil)	7,294	1.1
Freeman-United Coal Mining Co. (General Dynamics Corp.)	6,510	1.0
Western Energy Co. (Montana Power Co.)	6,407	1.0
Utah Int'l Inc. (General Electric)	6,073	0.9
Industrial Generating Co.	6,000	0.9
U.S. Total	649,000	100.0
Oil Firm Production	108,340	16.7
Top 4	169,231	26.0[3]
Top 8	231,724	35.7
Top 15	295,407	45.5
Top 20	327,691	50.5

---

[1] Includes captive production.

[2] 20.6 percent owned by Standard of California.

[3] Individual percentages may not add to totals because of rounding.

(r) revised August 1977.

Source: Keystone Coal Industry Manual, U.S. Coal Production by Company, 1975, company interviews. Bureau of Mines (U.S. Total).

TABLE 75

U.S. BITUMINOUS COAL AND LIGNITE PRODUCTION, 1970[1/]

(000 Tons)

Company	Production	Percent of Total U. S. Production
Peabody Coal Co. (Kennecott Copper)	67,850	11.3
Consolidation Coal Co. (Continental Oil)	64,062	10.6
Island Creek Coal Co. (Occidental Petro.)	29,722	4.9
Pittston Co.	23,694	3.9
United States Steel Corp.	19,631	3.3
Bethlehem Mines Corp.	14,605	2.4
Eastern Associated Coal Corp. (Eastern Gas & Fuel Assoc.)	14,539	2.4
Ayrshire Coal Co. (American Metal Climax)	14,427	2.4
General Dynamics Corp.	14,092	2.3
Old Ben Coal Corp. (Standard Oil of Ohio)	11,687	1.9
Westmoreland Coal Co.	11,347	1.9
North American Coal Corp.	9,674	1.6
Pittsburg & Midway Coal Mining Co. (Gulf Oil Corp.)	7,838	1.3
Utah Construction & Mining Co.	6,021	1.0
Southwestern Illinois Coal Corp.	5,715	0.9
Valley Camp Coal Co.	5,534	0.9
Central Ohio Coal Co. (American Electric Power Co.)	5,526	0.9
Republic Steel Corp.	4,950	0.8
Ziegler Coal & Coke Co.	4,760	0.8
Rochester & Pittsburgh Coal Co.	4,707	0.8
U. S. Total	602,932	100.0
Top 4	185,328	30.7[2/]
Top 8	248,530	41.2
Top 15	314,904	52.2
Top 20	340,381	56.5
Oil Firm Production	115,745	19.2

[1/] Includes captive production.

[2/] Individual percentages may not add to totals because of rounding.

Source: Keystone Coal Industry Manual, U. S. Coal Production by Company, 1970; Bureau of Mines, Mineral Yearbook, 1970, (U.S. Total)

TABLE 76

U.S. BITUMINOUS COAL AND LIGNITE PRODUCTION, 1965[1]

(000 Tons)

Company	Production	Percent of Total U. S. Production
Peabody Coal Co.	49,050	9.6
Consolidation Coal Co.	48,643	9.5
Island Creek Coal Co.	20,584	4.0
U. S. Steel Corp.	17,991	3.5
The Pittston Co.	13,611	2.7
General Dynamics Corp.	12,668	2.5
Bethlehem Mines Corp.	11,952	2.3
Eastern Associated Coal Corp. (Eastern Gas & Fuel Assoc.)	11,603	2.3
Old Ben Coal Co.	8,474	1.7
Ayrshire Collieries Corp.	8,313	1.6
Pittsburg & Midway Coal Mining Co. (Gulf Oil Corp.)	8,186	1.6
North American Coal Corp.	5,983	1.2
Westmoreland Coal Co.	5,848	1.1
Jones & Laughlin Steel Corp.	5,345	1.0
Winding Gulf Coals, Inc.	5,280	1.0
Southwestern Illinois Coal Corp.	5,130	1.0
Republic Steel Corp.	4,840	1.0
Zeigler Coal & Coke Co.	4,468	0.9
Valley Camp Coal Co.	4,270	0.8
Rochester & Pittsburgh Coal Co.	4,252	0.8
U. S. Total	512,088	100.0
Top 4	136,268	26.6[2]
Top 8	186,102	36.3
Top 15	233,531	45.6
Top 20	256,491	50.1
Oil Firm Production	8,186	1.6

[1] Includes captive production.

[2] Individual percentages may not add to totals because of rounding.

Source: Keystone Coal Buyers Manual, Coal Production in the United States, 1965, Bureau of Mines, Mineral Yearbook, 1970 (U.S. Total)

TABLE 77

U.S. BITUMINOUS COAL AND LIGNITE PRODUCTION, 1960[1/]

(000 Tons)

Company	Production	Percent of Total U. S. Production
Consolidation Coal Co.	29,016	7.0
Peabody Coal Co.	28,749	6.9
U. S. Steel Corp.	17,971	4.3
The Pittston Co.	13,028	3.1
Island Creek Coal Co.	12,147	2.9
Eastern Gas and Fuel Associates	9,515	2.3
Bethlehem Mines Corp.	9,256	2.2
West Kentucky Coal Co.	6,927	1.7
Freeman Coal Mining Corp. (General Dynamics Corp.)	6,834	1.6
Ayrshire Collieries Corp.	6,446	1.6
North American Coal Corp.	6,325	1.5
Truax-Traer Coal Co.	5,954	1.4
Zeigler Coal & Coke Co.	4,364	1.1
Rochester & Pittsburgh Coal Co.	4,238	1.0
United Electric Coal Co.	4,229	1.0
Pittsburg & Midway Coal Mining Co. (Spencer Chemical Co.)	4,155	1.0
Old Ben Coal Corp.	4,127	1.0
Valley Camp Coal Co.	4,010	1.0
Republic Steel Corp.	3,954	1.0
Jones & Laughlin Steel Corp.	3,764	0.9
U. S. Total	415,512	100.0
Top 4	88,764	21.4[2/]
Top 8	126,609	30.5
Top 15	164,999	39.7
Top 20	185,009	44.5

[1/] Includes captive production.

[2/] Individual percentages may not add to totals because of rounding.

Source: Keystone Coal Buyers Manual, Coal Production in the United States.... 1960; Bureau of Mines, Minerals Yearbook, 1970 (U. S. Total)

TABLE 78

U.S. BITUMINOUS COAL AND LIGNITE PRODUCTION, 1955[1]

(000 Tons)

Company	Production	Percent of Total U. S. Production
Pittsburgh Coal Co. of Pa.	28,001	6.0
U. S. Steel Corp.	25,159	5.4
Peabody Coal Co.	19,397	4.2
Island Creek Coal Co.	10,247	2.2
Bethlehem Mines Corp.	9,886	2.1
Eastern Gas and Fuel Associates	9,307	2.0
Pocahontas Fuel Co., Inc.	8,464	1.8
The Pittston Co.	8,058	1.7
Truax Traer Coal Co.	7,662	1.6
West Kentucky Coal Corp.	7,493	1.6
Freeman Coal Mining Corp. (Material Service)	6,423	1.4
Republic Steel Corp.	5,499	1.2
North American Coal Corp.	5,331	1.1
Jones & Laughlin Steel Corp.	5,313	1.1
Kirkpatrick Mining Co.	5,001	1.1
Berwind-White Coal Mining Co.	4,896	1.0
Ayrshire Collieries Corp.	4,871	1.0
Rochester & Pittsburgh Coal Co.	4,602	1.0
Old Ben Coal Corp.	4,239	0.9
Omar Mining Co.	3,968	0.8
U. S. Total	464,633	100.0
Top 4	82,804	17.8[2]
Top 8	118,519	25.5
Top 15	161,241	34.7
Top 20	183,817	39.6

1/ Includes captive production

2/ Individual percentages may not add to totals because of rounding.

Source: Keystone Coal Buyers Manual, Coal Production in the United States.....1955; Bureau of Mines, Mineral Yearbook, 1970 (U.S. Total)

II.A.2. U.S. COAL RESERVES: 1975, 1979 and 1980

TABLE 79

PROVEN U.S. COAL RESERVES, 1980
(Millions of Tons)

Company 1/	Reserves	% of Total
Burlington Northern	14,700 2/	5.2
Consolidation (Conoco)	13,700	4.8
Exxon	9,200	3.2
Peabody Coal (Peabody Holding Company)	8,560	3.0
Phillips Petroleum	8,000	2.8
North American Coal Corp.	5,600	2.0
El Paso Natural Gas	5,200	1.8
Amax Coal Co. (Amax Inc.) 3/	5,045	1.8
Island Creek (Occidental Petroleum)	4,430	1.6
Mobil Corp.	3,500	1.2
Pittsburg & Midway (Gulf)	2,600	0.9
U. S. Steel	2,400	0.8
Atlantic Richfield	2,200	0.8
Sun Oil Co.	2,200	0.8
Rocky Mountain Energy Company	2,000	0.7
Bethlehem Mines (Bethlehem Steel)	1,800	0.6
Old Ben (Standard of Ohio)	1,713	0.6
Pacific Power & Light	1,700	0.6
Clinchfield Coal (Pittston)	1,700	0.6
Tenneco	1,700	0.6
Texaco, Inc.	1,650	0.6
Central Appalachian (Amer. Elec. Power Corp.)	1,600	0.6
Kerr-McGee Coal (Kerr-McGee Corp.)	1,500	0.5
R&F Coal (Shell Oil)	1,460	0.5
CanPac Minerals, Ltd.	1,410	0.5
Pocahontas Land (Norfolk & Western Rwy)	1,400	0.5
Utah International (General Electric)	1,300	0.5
Donan Joint Venture	1,224	0.4
Hillman Coal	1,154	0.4
Texas Utilities	1,150	0.4
Westmoreland Resources	1,100	0.4
Eastern Gas & Fuel	1,058	0.4
Houston Natural Gas (Ziegler Corp.)	1,000	0.4
Kaiser Steel	1,000	0.4
Montana Power (Western Energy)	1,000	0.4
NICOR	1,000	0.4
Armco	934	0.3
Westmoreland Coal	849	0.3
Kentucky River	800	0.3
Kaneb Services	750	0.3
U.S. Total	284,185 4/	100.0
Top 4	46,160	16.2 5/
Top 8	70,005	24.6
Top 15	89,335	31.4
Top 20	97,948	34.5
Top 30	111,796	39.3
Top 40	121,287	42.7
Total Oil Firms 6/	65,145	22.9

TABLE 79

U.S COAL RESERVES, 1980 (cont'd)

1/ Private companies only. The U.S. government owns over 100 billion tons, the largest single share of total reserves (at least 40 percent of the U.S. total).

2/ Approximately 5.8 billion tons of Burlington Northern's reserves are leased to coal companies. We are unable to determine if other firms report these leased reserves as their own.

3/ 20.6% owned by Standard of California.

4/ The figure for U.S. total coal reserves indicates an upward revision for coal reserves over previous years' reserve tables. In 1981, the U.S. Department of Energy released a study updating earlier estimates of the demonstrated reserve base of coal in the U.S. The Department of Energy estimates this base as equal to 474,556.2 million tons--an increase of 36 billion tons over the January 1, 1976 estimate made by the Bureau of Mines, U.S. Department of Interior. If we apply standard recovery rates of 50 percent for underground coal reserves (=318,199.7 million tons) and 80% percent for surface reserves (= 156,356.6 million tons), then we get an estimate of 284,185 million tons for actual recoverable coal reserves using today's technology. See Energy Information Administration, U.S. Department of Energy, Demonstrated Reserve Base of Coal in the U.S. on January 1, 1979, (May 1981).

5/ Individual percentages may not add to totals due to rounding.

6/ Oil firms in this total are: Ashland, Atlantic Richfield, Belco, Std. Oil (Calif.), Conoco, Coastal States, Exxon, Great Basins, Gulf, Husky, Kerr-McGee, Mobil, Occidental, Phillips, Quaker State, Reading & Bates, Shell, Std. Oil (Ohio), Sun, Tenneco, Texaco, Rocky Mountain Energy Co. (Union Pacific), Transcontinental Oil, Louisiana Land & Exploration. There are other oil firms holding coal reserves, but each would have less than 1 million tons. Their inclusion would have a negligible effect on market shares.

Source: 1981 Keystone Coal Industry Manual; Department of Energy (U.S. Total).

TABLE 80

PROVEN U.S. COAL RESERVES, 1979

(Millions of Tons)

Company 1/	Reserves	% of Total
Consolidation Coal (Continental Oil)	13,700	4.8
Burlington Northern	11,400 2/	4.0
Peabody Coal (Peabody Holding Co.)	8,900	3.2
Monterey Coal (Exxon Corp.)	8,400	3.0
Phillips Petroleum	8,000 3/	2.8
El Paso Natural Gas	5,200	1.8
North American Coal Corp.	5,100	1.8
Amax Coal Co. (Amax Inc.) 4/	5,045	1.8
Island Creek (Occidental Petroleum)	4,430	1.6
Mobil Corp.	3,500	1.2
U. S. Steel	3,000	1.1
Pittsburg & Midway Coal (Gulf Oil)	2,600	0.9
Atlantic Richfield Co.	2,200	0.8
Sun Oil Co.	2,200	0.8
Rocky Mountain (Union Pacific)	2,000	0.7
Bethlehem Mines (Bethlehem Steel)	1,800	0.6
NERCO, Inc. (Pacific Power & Light)	1,700	0.6
Clinchfield Coal (Pittston)	1,700	0.6
Tenneco	1,700	0.6
Texaco, Inc.	1,650	0.6
Central Appalachian (Amer. Elec. Power Corp.)	1,500	0.5
Kerr-McGee Coal (Kerr-McGee Corp.)	1,500	0.5
R&F Coal (Shell Oil)	1,460	0.5
CanPac Minerals, Ltd.	1,410	0.5
Pocahontas Land (Norfolk & Western Rwy)	1,400	0.5
Utah International (General Electric)	1,300	0.5
Westmoreland Resources	1,100	0.4
Eastern Associated Coal (Eastern Gas & Fuel)	1,058	0.4
Ziegler Coal (Houston Natural Gas)	1,000	0.4
Western Energy (Montana Power)	1,000	0.4
Nicor	1,000	0.4
Hillman Coal & Coke	964	0.3
Westmoreland Coal Co.	849	0.3
Old Ben (Standard of Ohio)	825	0.3
Kentucky River Coal Corporation	800	0.3
Kaneb Services	750	0.3
Greenwood Stripping	735	0.3
Cape Breton Development	724	0.3
Standard of California	700	0.3
Arch Minerals; Ashland Coal (Ashland Oil)	650	0.2
U.S. Total	284,185 5/	100.0 6/
Top 4	42,400	14.9
Top 8	65,745	23.1
Top 15	85,675	30.2
Top 20	94,225	33.2
Top 30	106,953	37.6
Top 40	114,950	40.5
Total Oil Firms 7/	63,336	22.3

TABLE 80

U.S COAL RESERVES, 1979 (cont'd)

1/ Private companies only. The U.S. government owns over 100 billion tons, the largest single share of total reserves (at least 40 percent of the U.S. total).

2/ Approximately 5.8 billion tons of Burlington Northern's reserves are leased to coal companies. We are unable to determine if other firms report these leased reserves as their own.

3/ This figure has been revised upwards due to a reevaluation of reserve estimates and the acquisition of other coal properties.

4/ 20.6% owned by Standard of California.

5/ The figure for U.S. total coal reserves indicates an upward revision for coal reserves over previous years' reserve tables. In 1981, the U.S. Department of Energy released a study updating earlier estimates of the demonstrated reserve base of coal in the U.S. The Department of Energy estimates this base as equal to 474,556.2 million tons--an increase of 36 billion tons over the January 1, 1976 estimate made by the Bureau of Mines, U.S. Department of Interior. If we apply standard recovery rates of 50 percent for underground coal reserves (=318,199.7 million tons) and 80% percent for surface reserves (=156,356.6 million tons), then we get an estimate of 284,185 for actual recoverable coal reserves using today's technology. See Energy Information Administration, U.S. Department of Energy, Demonstrated Reserve Base of Coal in the U.S. on January 1, 1979, (May 1981).

6/ Individual percentages may not add to totals due to rounding.

7/ Source: 1980 Keystone Coal Industry Manual.

Oil firms in this total are: Ashland, Atlantic Richfield, Belco, Std. Oil (Calif.), Continental, Coastal States, Exxon, Great Basins, Gulf, Husky, Kerr-McGee, Mobil, Occidental, Phillips, Quaker State, Reading & Bates, Shell, Std. Oil (Ohio), Sun, Tenneco, Texaco, Rocky Mountain Energy Co. (Union Pacific), Transcontinental Oil, Louisiana Land & Exploration. There are other oil firms holding coal reserves, but each would have less than 1 million tons. Their inclusion would have a negligible effect on market shares.

Source: 1980 Keystone Coal Industry Manual; 1979 Annual Reports, Statistical Supplements, 10-K Reports, Dept. of Energy, Demonstrated Reserve Base o Coal in the U.S. on January 1, 1979 (U.S. Total)

TABLE 81

U.S. COAL RESERVES 1975(r)
(Millions of Tons)

Company[1]	Reserves	Percent of Total U.S. Reserves
Consolidation Coal (Continental Oil)	13,350	5.3
Burlington Northern	11,400[2]	4.6
Peabody Coal (Kennecott Copper)	9,000	3.6
Monterey Coal (Exxon)	8,400[3]	3.4
Amax[4]	5,045	2.0
North American Coal Corp.	5,000	2.0
Island Creek Coal (Occidental Petroleum)	3,400	1.4
U.S. Steel	3,000	1.2
Kerr-McGee	2,800	1.1
Eastern Gas and Fuel Corp.	2,600	1.0
Pittsburg & Midway Coal (Gulf Oil)	2,600	1.0
Mobil Oil	2,500	1.0
NERCO (Pacific Power & Light)	2,500	1.0
Sun Oil	2,271	0.9
Atlantic Richfield	2,200	0.9
Texaco	2,000	0.8
Rocky Mountain Energy Co. (Union Pacific)	2,000	0.8
Phillips Petroleum	2,000	0.8
Bethlehem Steel	1,800	0.7
Tenneco	1,700	0.7
U.S. Total	250,000[5]	100.0
Top 4	42,150	16.9[6]
Top 8	58,595	23.4
Top 15	76,066	30.4
Top 20	85,566	34.2
Oil Firms	55,063[7]	22.0

---

[1] Private companies only. The U.S. government owns the largest single share of total reserves, over 100 billion tons (at least 40 percent of the U.S. total).

[2] Approxmiately 5.8 billion tons of Burlington Northern's reserves are leased to other coal companies. We have no way of determining whether these coal companies report these leased reserves as their own.

TABLE 81

U.S. COAL RESERVES, 1975 (Cont'd)

3/ As reported by Exxon Corporation.

4/ 20.6% owned by Standard of California.

5/ The U.S. Geological Survey estimates that the "total reserve base" deemed suitable for mining by current methods is 434 billion tons. However, not all of this is recoverable since much of the coal is necessarily left in the ground during the mining process. If the recovery rate is taken as 50 percent, then recoverable reserves are 217 billion tons. In addition, Exxon estimates that there are an additional 34 billion tons of "inferred reserves" that are recoverable but not counted by the USGS. Thus, total recoverable reserves are about 250 billion tons. This figure is a conservative estimate since recovery rates rise as high as 80 percent in strip mines. In addition, the ownership shares reported above will be overstated to the extent reported reserves do not allow for the fraction of coal that must be left in the ground.

6/ Individual percentages may not add to totals due to rounding.

7/ Source: 1975 Keystone Coal Industry Manual. Oil firms in this total are: Continental Oil, Rocky Mountain (Union Pacifi), Occidental, Exxon, Kerr-McGee, Gulf, Mobil, Sun, Atlantic Richfield, Texaco, Phillips, Tenneco, Shell, Std. Oil (Ohio), Quaker State, Ashland, McCulloch, El Paso, Belco, Husky, Readings & Bates, Transcontinental, MAPCO, Merchants, Diamond Shamrock, Coastal States, and Belva.

(r) Revised August 1978.

Source: Company Annual Reports; Keystone Coal Industrial Manual, 1975: House Committee on Mines & Mining; Bureau of Mines (U.S. Total).

II.A.3. U.S. URANIUM CONCENTRATE (U_3O_8) PRODUCTION: 1955, 1960, 1965, 1970, 1975, 1979 and 1980

TABLE 82

U.S. URANIUM CONCENTRATE (U_3O_8) PRODUCTION, 1980
(TONS)

Company	Production	% of Total
Kerr-McGee	2,813.3	12.9
Utah Int'l (General Electric)1/	2,100.0	9.6
Atlantic Richfield	2,024.5	9.3
Exxon	1,800.0	8.2
Union Carbide	1,450.0	6.6
United Nuclear 2/ 3/	1,150.0	5.3
Western Nuclear (Phelps Dodge)	1,036.5	4.7
Standard of California	961.0	4.4
Atlas	737.5	3.4
U.S. Steel	726.5	3.3
Getty	702.0	3.2
Rio Algom	549.5	2.5
Conoco	453.1	2.1
Homestake2/	447.9	2.0
Wyoming Minerals (Westinghouse)	441.2	2.0
American/Federal Partnership	408.0	1.9
Mobil	385.5	1.8
Rocky Mountain (Union Pacific)	353.0	1.6
Freeport	347.03/	1.6
Energy Fuels	335.6	1.5
U.S. Total	21,850.0	100.0
Top 4	8,737.8	40.04/
Top 8	13,335.3	61.0
Top 15	17,393.0	80.0
Top 20	19,222.1	88.0
Oil Firm Total5/	9,722.6	44.5

1/ Based on a production capacity of 4.2 million pounds.

2/ Includes share in partnership between United Nuclear and Homestake Mining.

TABLE 82

U.S. URANIUM CONCENTRATE (U_3O_8) PRODUCTION, 1980 (cont)

3/ Includes purchased ore, byproduct uranium recovery and production by ion exchange from mine waters.

4/ Individual percentages may not add to totals due to rounding.

5/ Oil firms included in this total are: Kerr-McGee, Exxon, Atlantic Richfield, Conoco, Std. Oil (California), Std. Oil (Ohio), Gulf, Getty, and Mobil.

Source: Company annual reports and 10-K's, Department of Energy, "Statistical Data of the U.S. Uranium Industry," January 1, 1981 (U.S. Total).

TABLE 83

U.S. URANIUM CONCENTRATE (U_3O_8) PRODUCTION, 1979(r)
(TONS)

Company	Production	% of Total
Kerr-McGee	2,544.6	13.6
Utah Int'l (General Electric)	2,100.0 1/	11.2
Atlantic Richfield	1,871.0	10.0
United Nuclear 2/ 3/	1,800.0	9.6
Exxon	1,700.0	9.1
Union Carbide	1,350.0	7.2
Western Nuclear (Phelps Dodge)	1,033.7	5.5
Atlas	545.0	2.9
Rio Algom	497.0	2.7
Rocky Mountain (Union Pacific)	401.3 4/	2.1
American/Federal Partnership	346.5	1.8
Homestake 2/	326.6	1.7
Freeport	309.5	1.7
Ranchers	309.3 5/	1.7
Std. Oil (California)	281.4	1.5
Conoco	259.5	1.4
Gulf	230.0	1.2
Niagara Mohawk	225.0	1.2
Pioneer	197.8	1.1
Dawn (Newmont)	190.5	1.0
U.S. Total	18,730.0	100.0
Top 4	8,315.6	44.4 6/
Top 8	12,944.3	69.1
Top 15	15,415.9	82.3
Top 20	16,518.7	88.2
Oil Firm Total 7/	7,220.2	38.5

1/ Based on a production capacity of 4.2 million pounds.

2/ Includes share in partnership between United Nuclear and Homestake Mining.

TABLE 83

U.S. URANIUM CONCENTRATE (U_3O_8) PRODUCTION, 1979(cont'd)

3/ Includes purchased ore, byproduct uranium recovery and production by ion exchange from mine waters.

4/ Because of insufficient data, this figure is estimated by multiplying the per day milling capacity by the average millfeed grade of ore (0.11%) as reported by DOE (PR No. 80-76).

5/ Includes tailings of 91,377 tons.

6/ Individual percentages may not add to totals due to rounding.

7/ Oil firms included in this total are: Kerr-McGee, Exxon, Atlantic Richfield, Conoco, Std. Oil (California), Std. Oil (Ohio), Gulf, and Mobil.

Source: Company annual reports and 10-K's, Department of Energy "Statistical Data of the U.S. Uranium Industry," January 1, 1980 (U.S. Total).

TABLE 84

U.S. URANIUM CONCENTRATE (U_3O_8) PRODUCTION, 1975(r)

(TONS)

Company	Production	Percent of Total
Kerr-McGee	2,300	19.8
Utah International	1,750	15.1
Anaconda	1,700	14.7
Union Carbide	1,000	8.6
Exxon	850	7.3
United Nuclear	775	6.7
Rio Algom	600	5.2
Atlas Corp.	484	4.2
Continental Oil	481	4.1
Cotter Corp. (Commonwealth Edison)	400	3.4
Dawn (Newmont)	345	3.0
Pioneer Nuclear	324	2.8
Homestake Mining Co.	194	1.7
Western Nuclear (Phelps Dodge)	N.A.	N.A.
Federal Resources Corp.	N.A.	N.A.
U.S. Total	11,600	100.0
Top 4	6,750	58.2[1]
Top 8	9,459	81.5
Top 15	N.A.	N.A.[2]
Oil Company Production[3]	3,631	31.3

[1] Individual percentages may not add to totals due to rounding.
[2] Because of a lack of data needed to complete this table, a 15-firm concentration ratio cannot be computed.
[3] This total includes Kerr-McGee, Exxon, Continental Oil.

N.A. Not available.

(r) Revised September 1980.

Source: House Committee on Mines and Mining; Dept. of Energy, "Statistical Data on the Uranium Industry," January 1, 1978 (U.S. Total).

TABLE 85

U.S. URANIUM CONCENTRATE (U_3O_8) PRODUCTION, 1970 (r)

(TONS)

Company	Production	Percent of Total U.S. Production (R)
Kerr-McGee Corp.[1]	2,664	20.7
Anaconda Co.	1,765	13.7
Union Carbide Corp.	1,436	11.1
Utah Int'l., Inc.	1,185	9.2
United Nuclear Corp.[2]	1,140	8.8
Atlas Corp.	865	6.7
Western Nuclear, Inc. (Phelps Dodge)	628	4.9
Susquehanna Western, Inc.	612	4.7
Cotter Corp. (Commonwealth Edison)	530	4.1
Petrotomics Co. (Getty)[3]	519	4.0
Homestake Mining Co.[4]	488	3.8
Dawn Mining Co. (Newmont)	372	2.9
Federal Resources Corp.[5]	293	2.2
American Nuclear Corp.[6]	195	1.5
Amax, Inc.	54	0.4
U.S. Total	12,900	100.0
Top 4	7,050	54.7[7]
Top 8	10,295	79.8
Top 15	12,746	98.8
Oil Company Production[8]	2,664	20.7

---

[1] Kerr-McGee's own production of 2,145 tons plus 519 tons (50% of the output of a joint venture with Getty in Petrotomics Co.).

[2] 70% of the output of a joint venture with Homestake.

[3] 50% of the ouput of a joint venture with Kerr-McGee. Includes Skelly.

[4] 30% of the output of a joint venture with United Nuclear.

[5] 60% of the output of a joint venture with American Nuclear.

[6] 40% of the output of a joint venture with Federal Resources.

[7] Individual percentages may not add to totals because of rounding.

[8] This total includes Kerr-McGee and Getty.

(r) Revised September 1980.

Sources: FTC, Concentration Levels and Trends in the Energy Sector of the U.S. Economy, March 1974; Dept. of Energy, "Statistical Data of the Uranium Industry," January 1, 1978, (U.S. Total).

TABLE 86

U.S. URANIUM CONCENTRATE (U_3O_8) PRODUCTION, 1965

(TONS)

Company	Production	Percent of Total U.S. Production
Kerr-McGee Corp.[1/]*	1,959	18.5
United Nuclear Corp.[2/]	1,460	13.8
Atlas Corp.	1,262	11.9
Union Carbide Corp.*	1,104	10.4
Anaconda Co.	773	7.3
Homestake Mining Co.[3/]	626	5.9
Western Nuclear, Inc. (Phelps Dodge)	577	5.4
Utah Int'l, Inc.	518	4.9
Amax, Inc.*	395	3.7
Susquehanna-Western, Inc.	372	3.5
Vanadium Corp.	296	2.8
El Paso Natural Gas Co.*	271	2.6
Federal Resources Corp.[4/]	216	2.0
Dawn Mining Co. (Newmont)	215	2.0
Petrotomics Co. (Getty)[5/]	197	1.9
American Nuclear Corp.[6/]	144	1.4
A-Z Minerals Corp.	51	0.5
Cotter Corp.	7	0.1
U. S. Total	10,600	100.0
Top 4	5,785	54.6[7/]
Top 8	8,279	78.1
Top 15	10,241	96.6
Top 20	10,443	98.5
Oil Company Production[8/]	2,230	21.0

[1/] Kerr-McGee's own production of 1,762 tons plus 197 tons (50% of the output of a joint venture with Getty in Petrotomics Co.).

[2/] 70% of the output of a joint venture with Homestake.

[3/] 30% of the output of a joint venture with United Nuclear.

[4/] 60% of the output of a joint venture with American Nuclear.

[5/] 50% of the output of a joint venture with Kerr-McGee.

[6/] 40% of the output of a joint venture with Federal Resources.

[7/] Individual percentages may not add to totals because of rounding.

[8/] Includes Kerr-McGee, and Getty Oil.

(r) revised August 1978.

Source: FTC, Concentration Levels and Trends in the Energy Sector of the U.S. Economy, March 1974, DOE publication, "Statistical Data of the Uranium Industry," January 1, 1978, (U.S. Total).

* Data supplied by individual companies to FTC.

TABLE 87

U.S. URANIUM CONCENTRATE (U_3O_8) PRODUCTION, 1960(r)

(TONS)

Company	Production	Percent of Total U. S. Production
Kerr-McGee Corp.*	3,329	17.7
Union Carbide Corp.*	2,464	13.1
Atlas Corp.	1,700	9.0
Anaconda Co.	1,584	8.4
Phillips Petroleum Co.	1,018	5.4
Homestake Mining Co.1/	932	5.0
Western Nuclear (Phelps Dodge)	890	4.7
Utah Int'l, Inc.	880	4.7
Texas Zinc Minerals Corp.	843	4.5
United Nuclear Corp.2/	813	4.3
Susquehanna-Western, Inc.	684	3.6
Vitro Corp.	492	2.6
Vanadium Corp.	408	2.2
Dawn Mining (Newmont)	376	2.0
Amax, Inc.	298	1.6
El Paso Natural Gas Co.*	271	1.4
Cotter Corp.	226	1.2
Gunnison Mining Co.	162	0.9
Federal Corp.3/	139	0.7
American Nuclear Corp.4/	93	0.5
Atlantic Richfield Co.	62	0.3
U. S. Total	18,800	100.0
Top 4	9,077	48.3 5/
Top 8	12,797	68.1
Top 15	16,711	88.9
Top 20	17,602	93.6
Oil Company Production 6/	4,680	24.9

1/ Homestake's own production of 583 tons plus 349 tons (30% of the output of a joint venture with United Nuclear).

2/ 70% of the output of a joint venture with Homestake.

3/ 60% of the output of a joint venture with American Nuclear.

4/ 40% of the output of a joint venture with Federal Resources.

5/ Individual percentages may not add to totals because of rounding.

6/ Includes Kerr-McGee, Phillips and Atlantic Richfield.

Source: FTC, Concentration Levels and Trends in the Energy Sector of the U.S. Economy, March 1974; Dept. of Energy, "Statistical Data of the Uranium Industry," Jan. 1978. (U.S. Total)

* Data supplied by individual company to FTC.

(r) revised August 1978.

TABLE 88

U.S. URANIUM CONCENTRATE (U_3O_8) PRODUCTION, 1955
(TONS)

Company	Production	Percent of Total U.S. Production
Union Carbide Corp.*	665	15.1
Anaconda Co.	604	13.7
Vanadium Corp.	549	12.5
Vitro Corp.1/	307	7.0
Kerr-McGee Corp.*	250	5.7
Amax, Inc.2/	137	3.1
Atlas Corp.3/	104	2.4
Susquehanna-Western, Inc.	22	0.5
Homestake Mining Co.4/	15	0.3
Dawn Mining Co.	7	0.2
Western Nuclear, Inc.	1	0.0
U.S. Total	4,400	100.0
Top 4	2,125	48.35/
Top 8	2,638	60.0
Top 15	2,661	60.5
Oil Company Production6/	250	5.7

1/ Atomic Energy Commission (AEC) data show "307 tons" U_3O_8 produced and "0" tons uranium ore mined.

2/ Formerly American Metal Climax Company.

3/ AEC data are for Hidden Spendor Mining Company, a wholly-owned subsidary of Atlas Corp.

4/ AEC data show "15 tons" U_3O_8 produced and "0" tons uranium ore mined.

5/ Individual percentages may not add to totals due to rounding.

6/ Includes Kerr-McGee

(r) Revised September 1978.

Source: FTC, Concentration Levels and Trends in the Energy Sector of the U.S. Economy, March 1974, DOE publication, "Statistical Data of the Uranium Industry," Jan. 1978 (U.S. Total)

* Data supplied by individual company to FTC.

II.A.4. U.S. OWNERSHIP OF URANIUM CONCENTRATE (U_3O_8) RESERVES: 1975, 1979 and 1980

TABLE 89

U.S. URANIUM CONCENTRATE (U_3O_8) RESERVES, 1980
(TONS)

Company	Reserve1/
Gulf	62,500
Kerr-McGee	57,000
United Nuclear2/	34,500
Conoco	30,500
Wyoming Minerals (Westinghouse)	26,900
Exxon	25,000
Western Nuclear (Phelps Dodge)	18,350
Mobil	18,100
Atlantic Richfield	15,000
Union Carbide	15,000
Phillips	12,500
Dawn (Newmont)	10,988
Reserve Oil & Mineral	8,649
Getty	8,074
Union	7,500
Std. of California	7,250
Geomet	7,000
Cleveland Cliffs	7,000
Homestake3/	6,957
Rocky Mountain (Union Pacific)	4,179
U.S. Total Reserve Estimate Based on $15/pound 4/	112,0005/
U.S. Total Reserve Estimate Based on $30/pound 4/	470,0007/
Total Reserve Estimate Based on $50/pound 4/	787,0008/
Total Oil Firm6/	255,699

TABLE 89

U.S. URANIUM CONCENTRATE (U_3O_8) RESERVES, 1980

1/ The economic basis of these figures may vary from company to company and, for each company, from year to year. Since individual company reserve estimates do not necessarily assume the particular cost per pound assumed by the DOE in its total reserve estimate, no concentration ratios are provided.

2/ Excludes amounts attributed to the minority interest in United Nuclear - Homestake Partners and TVA pursuant to joint venture agreement.

3/ Homestake's share of United Nuclear - Homestake Partnership and 85% ownership of mine in Gunniston, Colorado.

4/ The \$15, \$30, and \$50 cost categories are not representative of market prices. In calculating uranium reserves by cost category, DOE used estimated operating cost and those capital costs not yet incurred. Profit, cost of money, taxes, and already incurred expenditures such as those for property acquisition, exploration, mine development, and mill construction, are not included. In 1979, the market price for uranium as reported by DOE, was \$28.15, an average of contract and spot market prices.

5/ This figure is DOE's estimate of reserves available at a forward cost of \$15/pound.

6/ Includes Kerr-McGee, Gulf, Conoco, Exxon, Getty, Atlantic Richfield (Anaconda), Phillips, Std. of California, Std. of Ohio, Mobil, Union and Texaco.

7/ This figure is DOE's estimate of reserves available at a forward cost of \$30/pound.

8/ This figure is DOE's estimate of reserves available at a forward cost of \$50/pound.

Source: Company Annual Reports and 10-K's, DOE publication "Statistical Data of the Uranium Industry," January 1981. (U.S. Total)

TABLE 90

U.S. URANIUM CONCENTRATE (U308) RESERVES, 1979
(TONS)

Company	Reserve1/
Kerr-McGee	64,245
Gulf	63,000
United Nuclear2/	46,750
Phelps Dodge	28,400
Exxon	25,000
Mobil	25,000
Conoco	25,000
Atlantic Richfield	15,000
American Nuclear	14,946
Getty	13,617
Phillips	12,500
Dawn (Newmont)	11,719
Pioneer	10,500
Cleveland Cliffs	10,000
Rio Algom	9,000
Std. of California	8,000
Union	7,500
Std. of Ohio	7,250
Homestake 3/	5,741
Union Pacific	5,000
U.S. Total Reserve Estimate Based on $15/pound 4/	225,0005/
U.S. Total Reserve Estimate Based on $30/pound 4/	645,0007/
Total Reserve Estimate Based on $50/pound 4/	936,0008/
Total Oil Firms6/	269,362

TABLE 90

U.S. URANIUM CONCENTRATE (U_3O_8) RESERVES, 1979 (cont'd.)

1/ The economic basis of these figures may vary from company to company and, for each company, from year to year. Since individual company reserve estimates do not necessarily assume the particular cost per pound assumed by the DOE in its total reserve estimate, no concentration ratios are provided.

2/ Excludes amounts attributed to the minority interest in United Nuclear - Homestake Partners and TVA pursuant to joint venture agreement.

3/ Homestake's share of United Nuclear - Homestake Partnership and 85% ownership of mine in Gunniston, Colorado.

4/ The $15, $30, and $50 cost categories are not representative of market prices. In calculating uranium reserves by cost category, DOE used estimated operating cost and those capital costs not yet incurred. Profit, cost of money, taxes, and already incurred expenditures such as those for property acquisition, exploration, mine development, and mill construction, are not included. In 1979, the market price for uranium as reported by DOE, was $23.85, an average of contract and spot market prices.

5/ This figure is DOE's estimate of reserves available at a forward cost of $15/pound.

6/ Includes Kerr-McGee, Gulf, Conoco, Exxon, Getty, Atlantic Richfield (Anaconda), Phillips, Std. of California, Std. of Ohio, Mobil, Union and Texaco.

7/ This figure is DOE's estimate of reserves available at a forward cost of $30/pound.

8/ This figure is DOE's estimate of reserves available at a forward cost of $50/pound.

Source: Company Annual Reports and 10-K's, DOE publication "Statistical Data of the Uranium Industry," January 1980. (U.S. Total)

TABLE 91

U.S. URANIUM CONCENTRATE (U_3O_8) RESERVES, 1975(r)
(TONS)

Company	Reserves[1]
Kerr-McGee	145,000
Gulf	80,000
United Nuclear	40,000
Continental	25,000
Phelps Dodge	22,500
Getty	20,000
General Electric	17,500
Exxon	17,500
Anaconda[2]	15,000
Phillips	12,500
Rio Algom, U.S.A.	9,000
Reserve Oil and Mineral	5,500
Union Pacific	5,000
Std. of Ohio	5,000
Union Carbide	4,000
Pioneer[3]	4,000
Atlas Pacific	3,000
Std. of California	3,000
Ranchers Exploration	2,000
Houston Natural Gas	1,500

U.S. TOTAL RESERVE ESTIMATES:	
-- BASED ON $15/POUND 4/	430,000 5/
-- BASED ON $30/POUND 4/	640,000 7/
-- BASED ON $50/POUND 4/	-- 8/
TOTAL OIL FIRMS 6/	313,000

TABLE 91

U.S. URANIUM CONCENTRATE RESERVES (U_3O_8) RESERVES, 1975 (cont.)

1/ The economic basis of these figures may vary from company to company and, for each company, from year to year. Since individual company reserve estimates do not necessarily assume the particular cost per pound assumed by the DOE in its total reserve estimate, no concentration ratios are provided.

2/ Excludes amounts attributed to the minority interest in United Nuclear-Homestake Partners and TVA pursuant to joint venture agreement.

3/ Homestake's share of United Nuclear-Homestake Partnership and 85% ownership of mine in Gunniston, Colorado.

4/ The $15, $30, and $50 cost categories are not representative of market prices. In calculating uranium reserves by cost category, DOE used estimated operating cost and those capital costs not yet incurred. Profit, cost of money, taxes, and already incurred expenditures such as those for property acquisition, exploration, mine development, and mill construction, are not included. In 1975, the market price for uranium as reported by DOE was $10.70, an average of contract and spot market prices.

5/ This figure is DOE's estimate of reserves available at a forward cost of $15/pound.

6/ Includes Kerr-McGee, Gulf, Conoco, Exxon, Getty, Atlantic Richfield (Anaconda), Phillips, Std. of California, Std. of Ohio, Mobil, Union, and Texaco.

7/ This figure is DOE's estimate of reserves available at a forward cost of $30/pound.

8/ This figure is DOE's estimate of reserves available at a forward cost of $50/pound.

Source: Company annual reports and 10-k's, DOE publication "Statistical Data of the Uranium Industry," January 1978 (U.S. Total).

II.B.1. TOP U.S. ENERGY PRODUCING COMPANIES ON A BTU BASIS: 1955, 1960, 1965, 1970, 1975, 1979 and 1980

TABLE 92

U.S. ENERGY PRODUCING COMPANIES ON A B.T.U. BASIS, 1980
(Trillions of Btu's)

Company	Production	% of Total
Exxon	3,893.2	6.0
Atlantic Richfield	2,726.0	4.2
Conoco	1,877.1	2.9
Standard of Ohio	1,850.1	2.9
Standard of Indiana	1,834.5	2.8
Texaco	1,794.0	2.8
Shell	1,765.2	2.7
Gulf	1,764.7	2.7
Kerr-McGee	1,572.6	2.4
Standard of California 1/	1,568.0	2.4
Mobil	1,527.1	2.4
Peabody	1,334.1	2.1
Getty	1,178.9	1.8
Utah International	1,133.4	1.8
Sun	951.1	1.5
Amax 2/	936.9	1.5
Phillips	821.7	1.3
Union	787.1	1.2
U.S. Steel	633.7	1.0
Union Carbide	623.5	1.0
U.S. Total	64,447.3	100.0
Top 4	10,346.4	16.1 3/
Top 8	17,504.8	27.2
Top 15	26,770.0	41.5
Top 20	30,572.9	47.4

1/ Excludes production of Amax Coal Co. (20.6% owned by Standard of California). Incusion of 100% Amax production would result in the following changes:

Standard of California	2,504.9	3.9
Top 20	31,140.0	48.3

2/ Includes 100% of Amax.

3/ Percentages may not add to total due to rounding.

Source: Energy production figures were calculated by aggregating production figures for each energy source, as reported in tables found in Section I.A.1., I.A.2., I.A.3., and I.A.4., weighted by the appropriate value from Table 19.

TABLE 93

U.S. ENERGY PRODUCING COMPANIES ON A B.T.U. BASIS [illegible]79(r)

(Trillions of Btu's)

Company	Production	% of Total
Exxon	3,923.5	5.9
Texaco	2,102.7	3.2
Std. Oil (Indiana)	2,083.0	3.1
Conoco	1,769.1	2.7
Atlantic Richfield	1,757.9	2.7
Gulf	1,709.8	2.6
Shell	1,617.2	2.4
Std. Oil (Ohio)	1,548.2	2.3
Peabody	1,445.3	2.2
Mobil	1,395.5	2.1
Kerr-McGee	1,330.8	2.0
Std. Oil (California)1/	1,157.8	1.7
Utah International	1,095.0	1.7
Sun	910.9	1.4
Getty	871.7	1.3
Phillips	843.5	1.3
Union	810.1	1.2
Amax2/	780.7	1.2
United Nuclear	774.0	1.2
Cities Service	621.3	0.9
U.S. Total	66,166.8	100.0
Top 4	9,878.3	14.93/
Top 8	16,511.4	25.0
Top 15	24,728.4	37.4
Top 20	28,558.0	43.2

1/ Excludes production of Amax Coal Co. (20.6% owned by Standard of California). Incusion of 100% Amax production would result in the following changes:

Standard of California	1,938.5	2.9
Top 20	29,133.0	44.0

2/ Includes 100% of Amax.

3/ Percentages may not add to total due to rounding.

Source: Energy production figures were calculated by aggregating production figures for each energy source, as reported in tables found in Section I.A.1., I.A.2., I.A.3., and I.A.4., weighted by the appropriate value from Table 19.

TABLE 94

U.S. ENERGY PRODUCING COMPANIES ON A B.T.U. BASIS, 1975(r)
(Trillions of Btu's)

Company	Production	Percent of Total U.S. Energy Production
Exxon	3,842.5	6.4
Texaco	2,727.6	4.5
Continental	2,241.0	3.7
Standard of Indiana	2,065.6	3.4
Shell	1,832.5	3.0
Gulf	1,760.0	2.9
Peabody Coal Co.	1,724.0	2.9
Mobil	1,447.6	2.4
U.S. Total	60470.5	100.0
Top 4	10,876.7	18.0
Top 8	17,640.8[1/]	29.2

[1/] Excludes production of Amax Coal Co. (20.6 percent owned by Standard of California). The inclusion of Amax Coal would result in the following:

Standard of California
Production: 1,776.2
percent of Total: 2.9

Top 8: Production: 17,969.4
Percent of Total: 29.3

(r) Revised August 1978.

Source: Energy production figures were calculated by aggregating production for each energy source, as reported in Murphy, Pamela, Concentration Levels in the Production and Reserve Holdings of Crude Oil, Natural Gas, Coal and Uranium in the U.S., and in the Keystone Coal Industry Manual, U.S. Coal Production by Company weighted by the appropriate BTU value (Table 18).

TABLE 95

TOP EIGHT U. S. ENERGY PRODUCING COMPANIES ON A BTU BASIS 1970 (r)

(Trillions of Btu's)

Company	Production	Percent of Total U. S. Energy Production
Standard of New Jersey	4,052.4	6.5
Texaco	3,151.7	5.0
Gulf	2,540.5	4.1
Continental Oil	2,317.2	3.7
Shell	2,208.0	3.5
Standard of Indiana	2,149.5	3.4
Peabody Coal Co.	1,667.8	2.7
Mobil	1,643.9	2.6
U. S. Total	62,481.0	100.0
Top 4	12,061.8	19.3
Top 8	19,731.0	31.6

Source: Energy production figures were calculated by aggregating production figures for each energy source, as reported in Amy Hersh, Concentration Levels in the Production and Reserve Holdings of Crude Oil, Natural Gas, Coal and Uranium in the U.S., and in the Keystone Coal Industry Manual, U.S. Coal Production by Company, weighted by the appropriate Btu value (from Table 18).

(r) Revised September 1980.

TABLE 96

TOP EIGHT U. S. ENERGY PRODUCING COMPANIES ON A BTU BASIS 1965

(Trillions of Btu's)

Company	Production	Percent of Total U. S. Energy Production
Standard of New Jersey	2,538.9	4.8
Texaco	2,009.7	3.8
Gulf	1,826.3	3.4
Standard of Indiana	1,665.8	3.1
Shell	1,510.1	2.9
Standard of California	1,254.1	2.4
Peabody Coal Co.	1,246.9	2.4
Consolidation Coal Co.	1,236.5	2.3
U. S. Total	52,974.0	100.0
Top 4	8,040.7	15.2
Top 8	13,288.3	25.1

Source: Energy production figures were calculated by aggregating production figures for each energy source, as reported in Amy Hersh, Concentration Levels in the Production and Reserve Holdings of Crude Oil, Natural Gas, Coal and Uranium in the U.S., and in the Keystone Coal Industry Manual, U.S. Coal Production by Company, weighted by the appropriate Btu value (from Table 18).

TABLE 97

TOP EIGHT U. S. ENERGY PRODUCING COMPANIES ON A BTU BASIS 1960

(Trillions of Btu's)

Company	Production	Percent of Total U. S. Energy Production
Standard of New Jersey	1,517.4	3.1
Kerr McGee	1,511.9	3.1
Texaco	1,511.7	3.1
Phillips Petroleum	1,393.8	2.9
Standard of Indiana	1,208.7	2.5
Shell	1,148.2	2.4
Gulf	1,181.8	2.4
Union Carbide	1,059.5	2.2
U. S. Total	48,388.1	100.0
Top 4	5,934.8	12.3
Top 8	10,533.0	21.8

Source: Energy production figures were calculated by aggregating production figures for each energy source, as reported in Amy Hersh, Concentration Levels in the Production and Reserve Holdings of Crude Oil, Natural Gas, Coal and Uranium in the U.S., and in the Keystone Coal Industry Manual, U.S. Coal Production by Company, weighted by the appropriate Btu value (from Table 18).

TABLE 98

TOP EIGHT U. S. ENERGY PRODUCING COMPANIES ON A BTU BASIS 1955

(Trillions of Btu's)

Company	Production	Percent of Total U. S. Energy Production
Standard of New Jersey	1,718.8	4.4
Phillips Petroleum	1,078.5	2.7
Texas Company	1,041.2	2.6
Shell	999.5	2.5
Standard of Indiana	984.6	2.5
Socony-Mobil	804.0	2.0
Gulf	776.8	2.0
Standard of California	727.3	1.8
U. S. Total	39,413.5	100.0
Top 4	4,838.0	12.3
Top 8	8,130.7	20.6

Source: Energy production figures were calculated by aggregating production figures for each energy source, as reported in Amy Hersh, Concentration Levels in the Production and Reserve Holdings of Crude Oil, Natural Gas, Coal, and Uranium in the U.S., and in the Keystone Coal Industry Manual, U.S. Coal Production by Company, weighted by the appropriate Btu value (from Table 18).

II.B 2. TOP U.S. ENERGY PRODUCING COMPANIES ON A DOLLAR BASIS: 1955, 1960, 1965, 1970, 1975, 1979 and 1980

TABLE 99

U.S. ENERGY PRODUCING COMPANIES ON A DOLLAR BASIS, 1980
(Millions of Dollars)

Company	Production	% of Total
Exxon	8,340.7	6.4
Std. Oil (Ohio)	5,864.6	4.5
Atlantic Richfield	5,367.4	4.1
Std. Oil (Indiana)	5,043.2	3.9
Shell	5,005.5	3.8
Texaco	4,618.0	3.5
Gulf	4,069.7	3.1
Mobil	3,520.4	2.7
Std. Oil (California)1/	3,312.4	2.5
Conoco	2,803.4	2.2
Getty	2,600.9	2.0
Phillips	2,590.5	2.0
Sun	2,334.4	1.8
Union	1,975.7	1.5
Cities Service	1,591.9	1.2
Marathon	1,546.0	1.2
Peabody	1,536.2	1.2
Tenneco	1,168.4	0.9
Amax	1,056.92/	0.8
Amerada Hess	890.0	0.7
U.S. Total	130,188.8	100.0
Top 4	24,615.9	18.93/
Top 8	41,829.5	32.1
Top 15	59,038.7	45.3
Top 20	65,236.2	50.1

1/ Excludes production of Amax Coal Co. (20.6% owned by Standard of California). Incusion of 100% Amax production would result in the following changes:

Standard of California	4,366.6	3.4
Top 20	66,074.7	50.8

2/ Includes 100% of Amax.

3/ Percentages may not add to total due to rounding.

Source: Energy production figures were calculated by aggregating production figures for each energy source, as reported in tables found in Section I.A.1., I.A.2., I.A.3., and I.A.4., weighted by the appropriate value from Table 20.

TABLE 100

U.S. ENERGY PRODUCING COMPANIES ON A DOLLAR BASIS, 1979(r)
(Millions of Dollars)

Company	Production	% of Total
Exxon	5,629.0	6.2
Std. Oil (Indiana)	3,774.4	4.2
Texaco	3,590.8	4.0
Atlantic Richfield	3,346.7	3.7
Std. Oil (Ohio)	3,095.9	3.4
Shell	2,956.0	3.3
Gulf	2,830.4	3.1
Mobil	2,422.1	2.7
Conoco	2,303.4	2.6
Std. Oil (California)1/	2,115.6	2.3
Phillips	1,771.3	2.0
Getty	1,626.1	1.8
Sun	1,563.2	1.7
Peabody	1,513.9	1.7
Union	1,357.9	1.5
Cities Service	1,223.8	1.4
Marathon	998.0	1.1
Tenneco	851.8	0.9
Amax 2/	812.1	0.9
Superior	630.2	0.7
U.S. Total	90,238.7	100.0
Top 4	16,340.9	18.1 3/
Top 8	27,645.3	30.6
Top 15	39,896.7	44.2
Top 20	44,412.5	49.2

1/ Excludes production of Amax Coal Co. (20.6% owned by Standard of California). Incusion of 100% Amax production would result in the following changes:

Standard of California	2,927.7	3.2
Top 20	44,978.7	49.8

2/ Includes 100% of Amax.

3/ Percentages may not add to total due to rounding.

Source: Energy production figures were calculated by aggregating production figures for each energy source, as reported in tables found in Section I.A.1., I.A.2., I.A.3., and I.A.4., weighted by the appropriate value from Table 20.

TABLE 101

TOP EIGHT U.S. ENERGY PRODUCING COMPANIES ON A DOLLAR BASIS, 1975 (r)

(Millions of Dollars)

Company	Production	Percent of Total U.S. Energy Production
Exxon	2,961.0	6.3
Texaco	2,319.6	4.9
Standard of Indiana	1,817.3	3.8
Shell	1,742.7	3.7
Continental	1,716.0	3.6
Gulf	1,415.4	3.0
Peabody Coal Co.	1,369.7	2.9
Standard of California	1,226.1[1/]	2.6
U.S. Total	47,200.8	100.0
Top 4	8,840.6	18.7
Top 8	14,567.8	30.9

[1/] Excludes production of Amax Coal Co. (20.6% owned by Std. of Calif.) of California). The inclusion of Amax Coal would result in the following:

Standard of California:
production: 1635.6
percent of total: 3.5
Top 8: production: 14,977.3
percent of total: 31.8

Source: Energy production figures were calculated by aggregating production figures for each energy source, as reported in Pamela Murphy, Concentration Levels in the Production and Reserve Holdings of Crude Oil, Natural Gas, Coal and Uranium in the U.S., and in the Keystone Coal Industry Manual, U.S. Coal Production by Company, weighted by the appropriate dollar value (from Table 19).

(r) revised September 1980.

TABLE 102

TOP EIGHT U.S. ENERGY PRODUCING COMPANIES ON A DOLLAR BASIS 1970

(Millions of Dollars)

Company	Production	Percent of Total U.S. Energy Production
Standard of New Jersey	1,369.2	6.8
Texaco	1,142.9	5.7
Gulf	915.4	4.5
Shell	822.8	4.1
Standard of Indiana	706.6	3.5
Continental Oil	679.5	3.4
Standard of California	642.5	3.2
Atlantic Richfield	575.6	2.9
U. S. Total	20,127.1	100.0
Top 4	4,250.3	21.1
Top 8	6,854.5	34.1

Source: Energy production figures were calculated by aggregating production figures for each energy source, as reported in P. Murphy, Concentration Levels in the Production and Reserve Holdings of Crude Oil, Natural Gas, Coal and Uranium in the U.S., and in the Keystone Coal Industry Manual, U.S. Coal Production by Company, weighted by the appropriate dollar value (from Table 19).

TABLE 103

TOP EIGHT U.S. ENERGY PRODUCING COMPANIES ON A DOLLAR BASIS, 1965

(Millions of Dollars)

Company	Production	Percent of Total U.S. Energy Production
Standard of New Jersey	818.5	5.8
Texaco	722.5	5.2
Gulf	618.7	4.4
Shell	528.8	3.8
Standard of Indiana	518.8	3.7
Standard of California	486.8	3.5
Mobil	364.0	2.6
Phillips Petroleum	314.7	2.2
U. S. Total	13,999.4	100.0
Top 4	2,688.5	19.2
Top 8	4,372.8	31.2

Source: Energy production figures were calculated by aggregating production figures for each energy source, as reported in P. Murphy, Concentration Levels in the Production and Reserve Holdings of Crude Oil, Natural Gas, Coal and Uranium in the U.S., and in the Keystone Coal Industry Manual, U.S. Coal Production by Company, weighted by the appropriate dollar value (from Table 19).

TABLE 104

TOP EIGHT U.S. ENERGY PRODUCING COMPANIES ON A DOLLAR BASIS, 1960

(Millions of Dollars)

Company	Production	Percent of Total U.S. Energy Production
Texaco	561.8	4.6
Standard of New Jersey	532.7	4.3
Gulf	449.6	3.7
Shell	421.5	3.4
Standard of Indiana	374.8	3.1
Standard of California	341.7	2.8
Phillips Petroleum	303.6	2.5
Socony-Mobil	270.4	2.2
U.S. Total	12,251.4	100.0
Top 4	1,965.6	16.0
Top 8	3,256.1	26.6

Source: Energy production figures were calculated by aggregating production figures for each energy source, as reported in P. Murphy, Concentration Levels in the Production and Reserve Holdings of Crude Oil, Natural Gas, Coal and Uranium in the U.S., and in the Keystone Coal Industry Manual, U.S. Coal Production by Company, weighted by the appropriate dollar value (from Table 19).

TABLE 105

TOP EIGHT U.S. ENERGY PRODUCING COMPANIES ON A DOLLAR BASIS, 1955

(Millions of Dollars)

Company	Production	Percent of Total U.S. Energy Production
Standard of New Jersey	521.3	4.9
Texas Company	369.8	3.5
Shell	340.8	3.2
Standard of Indiana	299.5	2.8
Standard of California	283.3	2.7
Gulf	267.1	2.5
Socony-Mobil	261.6	2.5
Phillips Petroleum	246.0	2.3
U.S. Total	10,629.9	100.0
Top 4	1,531.4	14.4
Top 8	2,589.4	24.4

Source: Energy production figures were calculated by aggregating production figures for each energy source, as reported in P. Murphy, Concentration Levels in the Production and Reserve Holdings of Crude Oil, Natural Gas, Coal and Uranium in the U.S., and in the Keystone Coal Industry Manual, U.S. Coal Production by Company, weighted by the appropriate dollar value (from Table 19).

#19608

American Petroleum Institute
2101 L Street, Northwest
Washington, D.C. 20037

BEST AVAILABLE COPY